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The Army Family Research Program: The Research Plan

Judy Barokas and Gerald Croan, Editors

Caliber Associates

for

**Contracting Officer's Representative
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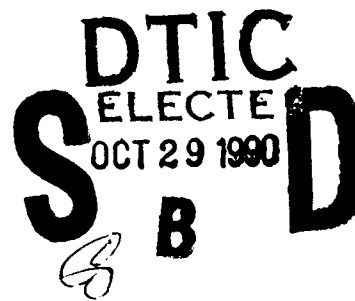
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Technical review by

Arthur C.F. Gilbert

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19. ABSTRACT (Continue on reverse if necessary and identify by block number) The Army Family Research Program (AFRP) is a 5-year integrated research program that supports the Chief of Staff of the Army (CSA) <u>White Paper 1983: The Army Family and The Army Family Action Plans</u> (1984-1990) by developing databases, models, program evaluation technologies, and policy options that assist the Army to retain quality soldiers, improve soldier and unit readiness, and increase family adaptation to Army life. This report presents the plan for anticipated research activities and discusses anticipated outcomes. A multimethod research strategy is proposed to investigate the relationships among family factors, Army experiences, retention, and readiness. The strategy begins with the development of a comprehensive theoretical framework portraying the relationships among Army, family, work, and community variables. Specifically, the Army organization and community characteristics combine individual soldier and family characteristics to create a series of Army experiences, soldier and family values, and expectations. Hypothetically, these will lead to soldier and spouse perceptions of equity between the costs and benefits (Continued)					
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of Army life. Positive perceptions yield adaptation, Army commitment, retention, and readiness. Negative perceptions lead to impaired soldiering and eventual separation from the Army.

Findings from proposed research activities will result in vastly improved knowledge of the impact of Army families and community support programs on retention and readiness. This knowledge will result in specific program and policy recommendations that will help the Army promote family adaptation to and satisfaction with Army family life, ultimately assuring maximum retention of soldiers and readiness of the force.

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FOREWORD

The Army clearly recognizes the partnership that exists between the Army and its families. Because of this recognition, the Army has increased program efforts to support families in all areas, including family research. The largest of the Army's family research activities is the Army Family Research Program's Family Factors in Retention, Readiness, and Sense of Community, a long-term research project conducted under the guidance of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI), sponsored under the umbrella of the Community and Family Support Center (CFSC), and executed by a corporate consortium of three major institutions, the Research Triangle Institute (RTI), Caliber Associates, and the Human Resources Research Organization (HumRRO).

This research program, a response to the research issues in the Army Family Action Plan, examines the role of family factors in retention and readiness. The end goal of this research is to produce improved programs, policies, and practices that (1) increase the adaptation of Army families; (2) enhance spouse employment opportunities; (3) improve retention of qualified personnel; (4) increase soldier and unit readiness; and (5) heighten the sense of identity with and participation in Army community life among soldiers and their families.

This research plan provides an overview of the entire Army Family Research Program. It is intended to guide the research process and to help ARI, CFSC, the project's steering committees, and other interested Army and DoD policy and family program managers to understand the scope of the intended research and its use for future policy decisions and programming.

At its conclusion, the project will provide the Army with research-based guidance on the design of improved policies and practices to address those family issues that have the greatest potential impact on family well-being and the Army mission. Specifically, the Army Family Research Program will provide intervention strategies to enhance the "Total Army" retention of high quality soldiers; detailed strategies on enhancing the career development of soldiers and their spouses; training guides for Army leadership on the importance to mission readiness of supporting Army families and the strategies for doing so; and finally, policy recommendations targeted to minimize relocation and separation stress and other disruptions in Army family life. Never before has there been a research project of this scope to examine the complex effects of families on readiness and retention.

ACKNOWLEDGMENTS

This presentation of the 5-year research plan for the Army Family Research Program's Family Factors in Readiness, Retention and Sense of Community is the result of the collaborative efforts of several institutions and many people. This plan represents the sponsorship of the Community and Family Support Center (CFSC), the vision of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI), the wisdom of the Scientific Advisory Committee, and the work of researchers from Research Triangle Institute (RTI), Caliber Associates, and the Human Resources Research Organization (HumRRO). Significant contributions were also made by scientists at the University of Georgia, Decision Sciences Consortium, University of North Carolina, and Systems Research and Applications.

At each of those organizations, the efforts of particular people were essential to the appearance of the plan in this form. At CFSC, BG Thomas Rhame, Gail McGinn, Emily Cato, and Paul Furukawa have provided the project with clear view of the policy objectives to be met by the Army Family Research Program (AFRP). At ARI, Kent Eaton, Paul Gade, Bruce Bell, Mel Kimmel, and Connie Devilbiss have guided and supported the research goals and research activities with both words and deeds. From the Scientific Advisory Committee, Mady Segal was especially helpful in commenting on work in progress.

At RTI, HumRRO, and Caliber, many more people have contributed their efforts than the few cited below who had direct responsibilities for sections in this plan for research. Judy Barokas wrote Chapter 1: Introduction to the Army Family Research Program. Dennis Orthner wrote Chapter 2: Theoretical Framework. Gerald Croan had primary responsibility for Chapter 3: Research Strategy.

Sharon Bishop edited Chapter 4: Developmental Research, from the contributions of all of the AFRP research areas: Sharon Bishop for Family Adaptation, Rose Etheridge for Retention, Bob Sadacca and Mary Kralj for Readiness, and Janet Griffith for Spouse Employment. Similarly, Al Cruze and Dennis Orthner put together all of the detailed plans for the Core Research Effort (Chapter 5). Some of those details on data needs and requirements were provided by Dennis Orthner, Bob Sadacca, Mary Kralj, Sharon Bishop, Janet Griffith, Brad Schwartz, and Stu Rakoff; on data collection activities by Nick Holt; on sampling by Vince Ianacchione; and on data analysis by Janet Griffith and George Dunteman.

In Chapter 6, Core Extension Research: Stu Rakoff and Rose Etheridge designed the Career Decision-Making Project; Bob Sadacca and Mary Kralj, the investigation on Unit Leadership/Readiness; Sharon Bishop and Dave Blankinship, the project on Installation Leadership; Sharon Bishop and Barbara Janofsky, the projects on Family Adaptation to Relocation and on Family Adaptation to Separation.

In Chapter 7, Complementary Research: Janet Griffith wrote descriptions of the Annual Survey of Army Families (ASAF), and the Model Spouse Employment Program. Bob Sadacca and Mary Kralj wrote the Project A/Family Effects section. Bob Bray and Rose Etheridge designed the TPU Attritee Research Project (TARP) study.

To the word processing staff who have devoted countless hours to the preparation of the manuscript, we owe a particular debt for undying patience.

EXECUTIVE SUMMARY

The Army Research Institute's Army Family Research Program: Family Factors in Retention, Readiness and Sense of Community is designed to answer essential policy questions regarding the impact of families on the Army mission. The 5-year research program described in this document examines the interrelationships between family factors, Army experiences, retention, and readiness. To answer these questions, this research effort begins with the development of a comprehensive theoretical framework portraying the relationships among Army, family, work, and community constructs. Specifically, the Army organization and community characteristics combine with individual soldier and family characteristics to create a series of Army experiences, individual and family values, and expectations. These in turn are hypothesized to lead to soldier and spouse perceptions of equity between the costs and benefits of Army life. Positive perceptions are hypothesized to yield individual and family adaptation, Army commitment, retention, and readiness. Negative perceptions probably lead to impaired soldiering and eventual separation from the Army.

From this theoretical framework, an integrated, multimethod research strategy is developed to investigate these hypothesized interrelationships. During the first and second years of the project, developmental activities serve to define the initial constructs and illuminate current knowledge about key relationships. These developmental activities include extensive literature reviews, secondary analyses, and exploratory interviews with soldiers, spouses, and Army leaders. These activities result in not only the development of measures and hypotheses to be tested in the primary research, but also the production of a series of papers and products that communicate to the Army what is known to date about family factors, retention, and readiness.

During the second through fourth years, the major activities will center on the core research effort, a multimethod field study of a probability sample of 40 installations, 480 units, 4,000 single soldiers, and 16,000 married soldiers and their spouses. Individuals will be surveyed to measure behaviors, attitudes, and perceptions about family and community life in the Army, retention, and readiness. Archival record reviews will supplement the survey by measuring individual performance and other soldier behaviors. Units will also be surveyed, and unit leaders interviewed to measure unit impacts on families, as well as unit readiness. Again, unit survey and interview data will be supplemented by unit record reviews to triangulate the unit level data. Installation/community characteristic records, reviews,

and interviews will provide quantitative and qualitative contexts for information about installation level leadership, family, and community support.

Several categories of respondents from the core sample will be followed up in extensions of the core research to provide supplementary qualitative and quantitative data on targeted elements of interest. These selected subsamples of the core research effort will include families in the retention decision-making process, families undergoing separations and relocations, units and installations with varying leadership practices, and levels of support for families. Each of these research projects will yield detailed recommendations for policy and program improvements to increase family well-being, retention, and readiness.

During the third through fifth years, most project data will be analyzed. Findings will result in the design of intervention strategies to enhance "Total Army" retention, the recommendation of programs to enhance spouse employment, and the deployment of training guides for Army leadership on the importance to mission readiness of supporting families. Specific strategies will be provided to promote the support of Army families, including program designs for minimizing relocation and separation stress.

Complementary research throughout the life of the project will extend the family adaptation, retention, and readiness inquiries of the Army Family Research Program to populations not included in the primary research effort. Thus, the complementary research provides the Army with a cost-effective means extending the breadth and depth of the Army Family Research Program.

In its entirety, the project is comprised of an integrated series of research efforts that support and complement each other. At their conclusion, the Army will have vastly improved knowledge of the impact of Army families and community support programs on retention and readiness. This knowledge will result in specific program and policy recommendations that will help the Army promote Army family adaptation to and satisfaction with Army family life, ultimately assuring maximum retention of soldiers and readiness of the force.

THE ARMY FAMILY RESEARCH PROGRAM: THE RESEARCH PLAN

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THE ARMY FAMILY RESEARCH PROGRAM: THE RESEARCH PLAN

CHAPTER 1: INTRODUCTION TO THE ARMY FAMILY RESEARCH PROGRAM

Single soldiers are a minority in today's Army; 61% of the enlisted personnel and 80% of the officers are married. The majority of the single soldiers are new recruits and officers, most of whom will marry early in their Army careers. Not only are the majority of soldiers married, but significant numbers (including many who are not married) also have children: 51% of enlisted personnel and 66% of officers. In short, today's Army is an Army of families found at all levels of the chain of command and all stages of the family life cycle.

The Army's commitment to families was clearly expressed in The Army Family White Paper (Wickham, 1983) and has been reinforced with four subsequent annual Army Family Action Plans (Department of the Army, 1984-87). Publication of these documents signaled the Army's recognition of the partnership that must exist between the Army and its families. In this partnership the Army commits to assuring adequate support to Army families in order to promote their "wellness." In turn, the Army emphasizes the reciprocal commitment of soldiers and their families to "the Army's mission, concept of service and lifestyle" (Wickham, 1983).

The Army's efforts to increase support to families are based on this "partnership" philosophy expressed in the White Paper. Underlying that partnership philosophy is the utilitarian assumption that the Army's support of families yields increased family and soldier commitment and ultimately retention and readiness. Testing that assumption and exploring its implications for Army policy form the basis for this research. The Army Family Research Program

(AFRP) was funded to provide detailed information on the role of family factors in retention and readiness. This information will then be applied to design improved programs, policies and practices which: (1) enhance the well-being and adaptation of Army families; (2) heighten identity with and participation in Army community life; (3) improve spouse employment opportunities; (4) increase retention of qualified personnel; and (5) increase soldier and unit readiness.

RESEARCH BACKGROUND

The past two decades have wrought major changes in the two institutions whose interface provides the impetus for this research effort -- the U.S. Army and the American family. Sociologists have attributed many of the changes in these institutions to the underlying cultural impact of increased "rationalism" in American society and its institutions (Segal & Segal, 1983). Rationalism in this sense refers to individual or organizational decision-making based on utilitarian self-interest rather than on moral obligations or institutional commitment. The effects of increased rationalism in the American economy are particularly visible. Work environments and work relationships are increasingly perceived as rational means to achievements of personal goals rather than as ends to self-definition in terms of a collective good.

For the Army, this increased rationalism may translate into a trend toward an occupational rather than an institutional model (Moskos, 1986). Soldiers in the occupational model see the Army as an "occupation," which has limited entitlements to the personal space and off-duty

hours of its members. Soldiers in a purely institutional model interpret Army claims as legitimate by virtue of duty, patriotism or organizational attachment, rather than by direct reward.

Both the institutional and occupational models underlie the partnership philosophy promoted by General Wickham in the White Paper and more recently by General Vuono. They promote both a moral and a more rationalistic, utilitarian philosophy. In General Vuono's words, "Family programs are not only the RIGHT THING to do for our soldiers -- they also improve our readiness through retention" (Vuono, 1987).

Like the Army and other economic institutions, the American family also been affected by the trend toward increasing rationality (Bellah, Madsen, Sullivan, Swidler & Tipton, 1985; Levinger, 1980). Both men and women increasingly define their occupational choices in terms of personal goals rather than identification with an institution. So too are they being less defined by the institutions of marriage and family, and more defined in terms of their independent pursuits and rational self-interest (Scanzoni, 1988).

Because of their infinite demands on service members' time, space, loyalty and commitment, both the family and the military are seen as "greedy institutions" (Segal, 1986). This dual claim to soldiers' time and duty has led many researchers to view these competing "greedy institutions" -- the military and its families -- in states of conflict (Hill, 1976; McCubbin, Marsden, Durning & Hunter, 1978),

potential conflict (Segal, 1986b), or chronic accommodation, producing both unique strains and unique strengths (Schumm & Hammond, 1986, Orthner & Pittman, 1986).

For the Army, the relationship with families has demanded increasing attention. The number of military spouses working outside the home has increased greatly. About 40% of enlisted men's and 44% of officers' wives are employed either full time or part-time (Griffith, et al., 1986). Military wives are challenging past expectations about their time commitments in support of their husbands' career. The Army is concerned that limited spouse employment opportunities and other family issues may lead quality soldiers to separate from the Army. Both the Army and Army families are negotiating the extent to which each institution can be "greedy" in making demands on its members' and families' loyalties and commitments. The fundamental purpose of Army Family Research Program is to examine the relationship between the Army and its families and its implications for the ultimate Army outcomes of retention and readiness.

Families and Retention

To staff an all-volunteer, active duty force, the Army must present itself as an attractive career choice at all points in both the soldier career cycle and the family life cycle. Demographic conditions determine the population pool from which the Army's personnel can be drawn, and the cohort of early career-age adults is shrinking in the United States. Demographers predict that all sectors of the American economy will compete for a declining number of new personnel in the 1990s and beyond. The proportion of 18-20

year olds in 1990 will be only 84% of their number in 1980, increasing briefly to 92% in the year 2000, and then decreasing again to 89% in the year 2010 (Bureau of the Census, 1983; Bureau of the Census, 1985). For all components of the total Army, the competition between the services, and between the military and civilian sectors to recruit and retain personnel already has become serious, and will become even more so in the next decades.

Retention of trained soldiers is at least as great an issue as recruitment. The numbers of Army reenlistments have declined by around 12% in the first half of the 1980s (Lakhani, 1986). In 1985, only 40% of soldiers with less than four years of service expected to serve beyond four years (LaVange et al., 1986). Increasing technological sophistication in the military necessitates that soldiers receive far greater amounts of training than in the past to operate modern military equipment. To protect its training investment and assure adequate technical competence in its force, the Army needs policies, programs and practices that maximize the retention of high quality soldiers. Although the planned force reduction may relieve some pressure on recruitment and retention, the need to retain the most capable soldiers will persist.

When soldiers are not retained, they must be replaced and their replacements provided equivalent training. The cost of personnel replacement in the Army is very high. In fact, one ARI paper estimated a potential savings of \$200 million per year from a 27% increase in reenlistment (Lakhani, 1986). The goal of retention policies in the Army is thus maximum retention of the trained force at minimum cost.

The Army recognizes that at every decision point in the career cycle, individual soldiers must choose between continuing their military career or selecting "comparable" opportunities in the civilian sector. The full impact of families on retention decision-making is only beginning to be understood, but the Army is beginning to recognize the important input that spouses have in the career decision-making process. Some research has shown that at all stages of the soldier career cycle, both marriage and parenthood increase the probability of reenlistment for men (Rakoff and Doherty, 1988). The contentment of spouses is a key issue for the Army; service members whose spouses are satisfied with Army life are far more likely to reenlist (Orthner, 1980; Szoc, 1982; Orthner, 1986) than those members with spouses who are dissatisfied.

Families and Readiness

Little is known about the actual effects of family factors on military readiness. Yet, in both military and civilian sectors, family factors are believed to affect job performance on many levels. For example, in the Army, some research suggests that soldiers who are not worried about the health, security and safety of their families are the most efficient in their MOS (Bryson, 1986). The positive impact of strong family life on job performance is frequently assumed in performance literature, but has rarely been subjected to empirical research. Much has been written about the negative impact of families who cannot cope with job demands.

In the civilian sector, decisions to relocate, to travel, and to accept greater work responsibility often are made on the basis of family needs (Harris and Associates, 1981; Burden and Googins, 1987). In the military sector, many work-related problems have probable family-related origins. Croan (1980) and the Military Family Resource Center (1984) have described possible family effects on job performance in the military. Among the most common are poor morale, disciplinary infractions, decreased attentiveness on the job, increased medical problems, early returns from overseas, and refusals to relocate. In one study of 1,000 families in Europe (McCubbin and Patterson, 1983), family issues were found to be a primary factor in USAREUR (U.S. Army in Europe) extension decisions, and were as important or more important than perceived promotion opportunities, job satisfaction, and/or unit morale. Family factors are thus frequently primary in both job performance and career decision-making.

Army Support of Families

Primarily through the initiatives in its Army Family Action Plan (AFAP), the Army has launched an ambitious effort to promote and improve the quality of Army family life. Greater attention is being focused on physical and mental health services, family violence prevention and treatment, housing, education and legal services. To date, over 150 AFAP issues have been identified as sources for Army actions to promote Army family well-being (Devine, Bishop, & Perrine, 1987). Attitudes toward various family support programs are not consistent, however, and both programs and support for them appear to vary considerably among installations (Orthner, Pais, & Janofsky, 1985). Much

information about the existence and quality of family support services appears to be learned informally rather than through formal dissemination by the military structure. Both program awareness and utilization among officers and enlisted soldiers appear to be functions of time in the military (Van Vranken, 1984). Often young soldiers and their families who most need support programs are unaware of their existence. Moreover, some reluctance to utilize services has been detailed because of fear of consequences to members' careers (Orthner, Pais & Janofsky, 1985; Nogami, Bowen & Merrin, 1986; Croan, Janofsky, & Orthner, 1987).

Overall, information is still scant about the awareness, utilization and importance to Army families of specific Army family support programs and policies. Also, the effect of the support for these programs on the desired Army outcomes of retention and readiness is still unknown. There is a clear need for more research to clarify the relationship between the Army's support for families, and successful family adaptation, and retention and readiness.

NEED FOR RESEARCH

The issues, questions, and decisions confronting Army policy-makers are increasingly complex and expensive. How should they frame family-oriented policies? On what information should they base their decisions? How can resources for family programs be defended against competing demands for training, equipment, and other personnel needs? Despite the recent groundswell of research on military families and the work/family interface, significant knowledge gaps still exist -- knowledge gaps which limit the effectiveness of policy-makers in justifying resources,

setting priorities, and designing better policies and programs. There is a need for more empirical, systematic research to fill these gaps and quantify the relationships that are believed to exist, thus supporting an appropriate, effective Army response.

Many questions remain about how and to what extent families affect the Army's two desired outcomes: retention of quality soldiers and readiness of the force. Once clear relationships among Army family and work variables are established, then policy-makers can decide:

- What policies, practices and programs are needed in the future to maximize retention and readiness;
- What, in fact, is within the Army's power to change; and
- What the costs and benefits are of those proposed changes.

Key research areas, issues and questions that need to be addressed are summarized below.

Adaptation

The Army White Paper assumes a connection between family "wellness" and retention and readiness, and therefore supports Army efforts to promote wellness and successful family adaptation to Army life. Most of the research on family wellness and adaptation has been based on relatively small studies of particular groups. More systematic research is needed on larger samples to facilitate generalizing quantifiable findings to the Army as a whole;

but more intensive research is also needed on various types of families under varying Army environments to determine how best to support families. The general research question to be addressed is: Under what circumstances will families adapt best to Army life and what can the Army do to help insure an optimal fit between Army and family needs? Key questions within this framework include:

- What policies and aspects of Army life cause the greatest stress for families?
- What processes do families use to cope successfully with these stresses?
- How do these factors and processes vary according to family demographics, family and career life cycle stage, and location and mission?
- How could the Army adjust its policies and work and living conditions (e.g., assignment policies, housing environments, work hour predictability) to mitigate stresses and increase adaptation without sacrificing readiness? What actions would be most effective at the Army-wide, installation and unit levels?
- What support programs and resources would be most effective in helping families to adapt to those demands that cannot be changed?

Retention

Although a general connection between family issues and the decision to stay or leave the Army has been established, there is a need to quantify the effects more rigorously so that the Army can determine its return on investment in family-oriented retention strategies. Also, richer information is needed on the family processes that affect retention decisions, under varying Army and family

conditions. The general research question for the AFRP is: How and to what extent do family characteristics and issues affect retention and related career decisions, and which Army policies, programs, and practices that affect family adaptation and commitment also have their greatest impact on retention? More specific questions include:

- How does the level of family adaptation and well-being affect soldier retention, acceptance of assignments, and willingness to enter the Reserves?
- To what extent does spouse employment success and career progress affect soldier retention?
- Which family factors are particularly salient in the retention of high performing soldiers?
- What Army policies, practices, and programs at the DA, installation and unit levels have the greatest potential indirect impact on retention because of their impact on family adaptation, perceived equity, and commitment?
- How do these factors vary for families and soldiers at different stages of the life and career cycle?
- What is the relative importance of family factors to retention, as compared to pay, job, and other non-family factors?
- How do spouses affect career decision-making, and how can the Army influence decision-making by focusing on spouse and family concerns?

Readiness

The largest information gap for policy-makers is the relationship of families to readiness. Major needs are to

develop relevant, useful measures of both individual and unit readiness, and then to document and quantify the linkages between family concerns and these readiness measures. The general research question to be addressed is: How and to what extent do family characteristics and issues affect individual and unit readiness, and how do Army policies, programs, and practices that affect family adaptation and commitment ultimately impact on readiness? Key questions within this general framework include:

- How does the level of family adaptation and well-being affect the morale, performance, deployability and overall readiness of individual soldiers?
- To what extent does spouse employment affect soldier readiness?
- To what extent does the spouse's preparedness for deployment affect soldier readiness?
- Which aspects of unit readiness are indirectly affected by family impacts on individual readiness?
- What Army policies, practices and programs, especially at the unit level, have the greatest potential impact on readiness, because of their effects on family adaptation, perceived equity, and commitment?

Spouse Employment

While considerable data are now available on the status of spouse employment and employment concerns in the Army, there is a scarcity of information on how to improve spouse employment and career success. There is also little information on how spouse employment status and job

satisfaction affect overall family adaptation to the Army and soldier retention and readiness. The general research question to be addressed is: How can the Army enable more spouses to meet their career and financial objectives while optimizing the impact on retention and readiness? Key questions within this area of concern include:

- What is the quantitative impact of Army job demands (e.g., frequency of PCS, length and unpredictability of hours, frequent absences, remote locations) on spouse employment rates, satisfaction, and earnings?
- What factors are most important in helping spouses to overcome barriers and maximize employment success?
- What policy and practice changes would enhance spouse employment prospects without significant sacrifices in readiness?
- What employment and support programs could the Army sponsor that would be most effective in assisting spouses to meet employment objectives?

STRUCTURE OF THE ARMY FAMILY RESEARCH PROGRAM

The Army's effort to understand the importance of family factors in retention, readiness and sense of community is an ambitious research undertaking. Never before has there been a research project of this scope, in either the civilian sector or the military, that examined the effects of families on work environments and career paths.

Under terms of contract MDA903-87-C-0540, a consortium of researchers from the Research Triangle Institute (RTI), Caliber Associates and the Human Resources Research Organization (HumRRO) is pursuing a five-year research program to help answer the research questions posed in the previous section. The project staff have been organized into four research area teams which reflect the major areas of investigation defined by the Army Family Research Program scope of work:

- Family adaptation
- Family factors in retention
- Family factors in readiness
- Spouse employment.

Each team has responsibility for developing specific hypotheses, conducting analyses and producing research products and technical reports in their respective areas.

The contractor staff work under the direction of scientists at the Army Research Institute for the Behavioral and Social Sciences (ARI). Close working relationships between the contracted staff and ARI scientists facilitate effective integration of in-house and contracted research efforts to assure maximum efficiency in meeting the research needs of Army managers.

In addition, the project is guided by two advisory groups. An Army advisory group helps assure maximum responsiveness to Army needs. A Scientific Advisory

Committee helps assure maximum technical quality of the research.

Finally, the AFRP research is linked with other family investigations in the Army research community, including research conducted by ARI's in-house staff, the Walter Reed Army Institute for Research (WRAIR), and the Rand Arroyo Center. ARI's in-house research is investigating behaviors and attitudes of special Army populations and the effects of possible policy changes, especially as they affect the career development of high quality soldiers. WRAIR, using intensive, small scale studies of selected populations, is studying military life stress, community and social supports and family problem-oriented issues, particularly those related to the New Manning System. The Rand Arroyo Center has been concentrating on the analysis of family program utilization, its cost and benefit, and the projection of future trends affecting Army families. The AFRP coordinates with these Army efforts and attempts to integrate findings and measures from these and other military and civilian family research efforts into its research designs and integrative research reports.

The primary audience for the AFRP is the set of Army agencies with direct responsibility for developing policies and delivering services for Army families. The principal focus of project activities is to prepare findings, policy recommendations, and intervention strategies that are useful to all levels of the Army manpower and personnel community including:

- Department of the Army, Office of the Assistant Secretary for Manpower and Reserve Affairs;

- Office of the Deputy Chief of Staff for Personnel (ODCSPER);
- Community and Family Support Center (CFSC);
- Family Liaison Office (FLO);
- Major Command (MACOM) personnel policy and program staff; and
- Installation leadership and family service staff, e.g., Army Community Service (ACS), Youth Activities (YA), Child Development Services (CDS), Family Support Groups, Director of Personnel and Community Activities (DPCA).

A secondary audience for the project is the community of family researchers within the Army, elsewhere in DoD, and the academic community at large. By consolidating knowledge through the clarification of critical issues and the development of appropriate methods and measures, this project should assist behavioral science researchers in understanding the complex interrelationships in family and work environments in both military and civilian sectors.

RESEARCH PLAN

This Research Plan provides an overview of the entire Army Family Research Program, including a brief summary of the developmental research activities conducted during the first year and the activities planned for the next four years. It is intended to help ARI, the project's advisory committees, the Community and Family Support Center, OSD/DA program managers, and other interested Army audiences to understand the purpose and scope of the intended research.

The Plan is presented in seven chapters. Chapter 1 introduces the overall research program and provides the research background for the theoretical framework which follows. Chapter 2 then describes the AFRP theoretical framework on which the research efforts are based. This chapter also outlines the sub-frameworks which give rise to the hypotheses to be tested throughout the research program.

Chapter 3 presents an overview of the research strategy used in the Army Family Research Program. It begins at the end -- with desired research outcomes. It then describes the approach taken by the project to gather the necessary data and plan the appropriate activities to reach the desired outcomes. This third chapter also details the schedule of research activities and the products to be produced to give the reader a sense of what will be accomplished throughout the five year course of the research program. Chapter 4 describes the developmental research carried out in the early stages of the program that served to clarify the hypotheses and research design and generate preliminary findings.

Chapters 5, 6 and 7 follow with the substantive descriptions of the three types of primary research activities comprising the research program: the Core Research Effort, the Core Extension Projects and the Complementary Research, respectively. The Core Research Effort is a multi-method data collection activity which provides the quantitative base for statistical modeling of the linkages between family factors, readiness and retention. The Core Extension Projects are more qualitative, frequently longitudinal investigations of targeted subsamples of families, installations and units

selected from the core sample. The Complementary Research Efforts investigate populations outside of the core sample in order to address particular AFRP issues on an accelerated basis. Together these three types of research activities -- the Core Research Effort, the Core Extension Projects and the Complementary Research -- provide the quantitative data for precise statistical modeling of linkages, the qualitative data for richness of understanding and the alternative samples for amplification of generalizability of research of family factors in retention and readiness.

In reviewing this document, it is important to recognize that while the Plan itself is a static document, the planning of the research activities is a dynamic process. The activities described in Chapters 5, 6 and 7 will be refined as the research progresses. Additional Complementary and Core Extension Projects have also been suggested and are under consideration. The plan may also need to be adjusted to fit changes in the availability of resources or in Army priorities. Full funding of all of the activities described in the Plan would require additional funding or the execution of planned contract options. We will seek Army and advisory committee guidance in prioritizing these activities and products so that appropriate adjustments can be made as necessary. The Research Plan will be updated annually to document any necessary modifications.

The following chapter presents the overall theoretical framework for addressing the research questions. The chapter begins by outlining the theoretical framework on which the research will be based and then describes how that theoretical framework translates into the individual

research submodels and hypotheses for the specified research areas.

CHAPTER 2: THE THEORETICAL FRAMEWORK

The Army Family Research Program draws upon basic and applied research from such diverse disciplines as military sociology, family science, family and labor economics, industrial and organizational psychology. In order to integrate the contributions from these disciplines, an integrated theoretical framework is a necessity. Moreover, the theoretical framework should be more than just a useful, heuristic device that suggests variables or constructs that need to be considered in the research. It should offer a guiding set of assumptions and propositions and, if possible, suggest a causal framework out of which hypotheses can be derived. By providing a causal model, a test of the theory and its underlying hypotheses can be conducted by ascertaining the fit between the model and empirical data.

In order to infer causality in research where experimental conditions are not possible, theoretical support for hypothesized relations must be evident (Blalock, 1968). Additionally, a number of other conditions must be evaluated in order to determine the appropriateness of a theoretical model for confirmatory analysis and causal inference (James, Mulaik & Brett, 1982). Among those conditions, four are especially relevant for the presentation of the theoretical framework: (1) formal statement of theory in terms of a structural model; (2) theoretical rationale for causal hypotheses; (3) specification of causal order; and (4) specification of causal direction.

In this case, theory is referred to as "a set (or sets) of interrelated causal hypotheses that attempt to explain the occurrence of phenomena" (James, Mulaik & Brett, 1982, p. 27). Causal relations can then be explained as functions of specific theorized phenomena (such as Social Exchange). Causality can also be specified through the weight of evidence based on previous relevant literature which defines the relationship in question. Causal order, of course cannot be inferred from correlational evidence on the basis of a small number of studies, but if one variable is consistently found to predict another throughout a literature base, then unidirectional causality can be specified.

This section of the research plan proposes a theoretical framework which serves as a foundation for the investigations included in the Army Family Research Program. The general theoretical framework is organized around the following research question:

What is the role of the family in the retention and readiness of active-duty Army personnel?

This question serves to specify the key criterion or dependent variables in the study. However, in order to specify the predictor or independent variables, it is necessary to propose a model and a set of assumptions out of which hypothesized relationships can be drawn. This is done by building a theory-based general model and then focusing on parts of the model to specify the hypotheses to be tested in this research.

BUILDING A THEORY-BASED MODEL

The model for this research is built upon two general theories of human behavior: social exchange theory and general systems theory. Each of these theories contains assumptions that are widely used in the social sciences. The assumptions underlying these theories are implicit in the conceptual frameworks that have been developed to date to explain family factors as predictors of retention (Croan, Bowen, Farkas, Glickman & Orthner, 1985; Segal, 1986a). Thus, the direct application of these theories to the building of a model which links family and other variables to job performance, as well as to retention/turnover decisions, does not represent a radical departure from prior efforts to model relationships between family variables and job-related outcomes.

The model portrayed in this research depicts individual decision-making and behavior at the micro level. The micro-model portrays that exchange principles operating in a systems context can accommodate both tangible and intangible elements in explaining career choices and readiness related behaviors. Factors that predict macro level behavior (e.g., Army, installation or company level) may well require different modeling strategies and normative explanations (cf. Segal & Segal, 1983).

Social Exchange Theory

Social exchange theory is a major theoretical framework commonly used in psychology, sociology, and economics. Exchange theory, first articulated during the 1960's, (Blau, 1964; Homans, 1961; Thibaut & Kelley, 1959) continues to

stimulate research on a wide variety of topics (cf. Levinger, 1980; Alessio, 1984; McDonald, 1981; Nye, 1979). The theory posits that all individuals seek gratification or rewards for their actions and wish to do so with a minimum level of costs (Burgess & Huston, 1979; Cook & Emerson, 1980). In an open market, however, all individuals and organizations are expected to share this same motivation, resulting in rewards and costs having to be negotiated by everyone in the system, whether an individual, family, or work organization (Chadwick-Jones, 1976; Simpson, 1972).

The theory is labeled "exchange" because of this element of explicit and implicit negotiation that goes on between individuals or between individuals and organizations as each seeks to maximize its benefits and minimize its costs (Ekeh, 1974; Heath, 1976). This process of exchanging benefits and costs usually results in mutual agreements and sets of behaviors that best meet the needs of all parties involved. In exchange terms, "maximum joint profit" is that set of behaviors that simultaneously optimizes both parties' interests (Scanzoni, 1979).

One of the major criticisms of exchange theory is its assumption of rational choice. The theory suggests that people consciously weigh or evaluate alternatives in a calculated manner with as much information as is needed to make a judgment. Exchange theorists themselves recognize this limitation (cf. Heath, 1976). Just as economists assume (as a convenient approximation) that individuals have accurate information when making choices, exchange theorists propose that rational decision-making occurs when in reality judgments are made with incomplete information, or with the awareness of inequitable consequences. Personal and family

values must be taken into account in these estimations of equity, as well as accommodations made as a result of previous negotiations.

Recent explications of social exchange theory have begun to include more non-rational elements in decision choice and behavioral models (Nye, 1979; Ekeh, 1974). Much as Fishbein and Ajzen (1975) suggest that normative and attitudinal factors impact significantly on behavior, social scientists recognize that exchanges between individuals are usually influenced by the attitudes associated with roles and the anticipated or actual influences of significant others (cf. Scanzoni and Szinovacz, 1980). Thus, social exchange theory both allows for and encourages hypotheses that take into account the beliefs that individuals hold as well as the social support networks that may encourage or discourage actions, such as retention or performance behavior.

Emotional or affective factors may also play a significant part in the motivations to behave in certain ways (Adelman, Pliske & Lehner, 1987; Rakoff, Adelman & Mandel, 1987). People's values and emotions influence their willingness to consider alternatives as well as their interpretations of their experiences. Therefore, it is important to include people's values and expectations in any model of exchange; this is certainly true in the present investigation.

There are several important attributes of exchange theory that the Army Family Research Program has incorporated in its theoretical design. First, exchange theory assumes that individuals are willing to make

commitments based upon inequitable exchanges that are more costly in the short run, if the long term benefits outweigh the short term loss of benefits (Kelley & Thibaut, 1978; Nye, 1979). People may perform well at jobs they perceive as providing few benefits if they can expect future rewards that will compensate for the present inequities. Without perceived eventual compensation, however, they will likely terminate those behaviors that are costing them too much right now (Burns, 1973; Cook & Emerson, 1978). Thus, it would be expected that soldiers who perceive negative inequities in their current environment would probably elect to leave the Army and may perform less well than those who perceive they are being justly rewarded, especially if they do not believe that these inequities will be made up in the near future.

A second important attribute of exchange theory is the recognition that rewards and costs can be both intangible and tangible (Gergen, Greenberg, & Willis, 1980). Behavioral motivation, therefore, can be influenced by a reward such as group cohesion or pride as well as by salary. Likewise, negative supervisor attitudes can be just as costly to some individuals as low salary or poor fringe benefits.

A third important element of exchange theory is the element of comparison (Emerson, 1981; Kelley & Thibaut, 1978). Individuals bring their own history into the exchange process and have a set of expectations for rewards and costs based on previous experiences (Emerson, 1976; Fishbein & Ajzen, 1975; Gergen et al., 1980). Soldiers or their spouses will compare the rewards and costs associated with their current environment to that of previous

environments they have experienced. Those who came from relatively poor, rural backgrounds, for example, may see the Army as offering them a greater benefit to cost ratio than those who came from upper-educated, urban backgrounds.

Another important part of this theory is the comparison level of alternatives. This comparison element suggests that individuals evaluate their current circumstances within the context of perceived alternative environments in which they may or may not get a better bargain from their exchange (Kelley & Thibaut, 1978; Nye, 1979). In the Army, this alternative comparison level would probably be a job in a civilian environment. Soldiers and family members probably evaluate the rewards and costs of their current environment vis-a-vis their anticipation of rewards and costs in a civilian situation (Crano, 1987).

General Systems Theory

General systems theory provides a useful theoretical understanding of the contexts within which exchange processes are occurring. General systems theory, as proposed by Buckley (1967), is a dynamic approach that has been used very successfully in building theoretical models in psychology and sociology. General systems theory has often been called "process theory." As such, it complements and extends the conceptual approaches of exchange, conflict, and symbolic interaction.

The chief assumption of general systems theory is that actors are goal-seeking and that, in concert with others, they seek to change social conditions in order to achieve their desired goals or purposes (Scanzoni, 1988).

Furthermore, individuals bring into their current environment insights concerning the meaning, values, and norms from previous circumstances. Exchanges are used to reconcile rewards and costs, and conflicts are the mechanism through which inequities are recognized and resolved. Conflict in this case does not necessarily refer to physical aggression but merely to the attitudinal or behavioral effects of real or perceived inequities that must be reduced.

One of the major benefits of borrowing concepts from general systems theory for the Army Family Research Program is that it suggests considerable on-going movement between macro and micro-level perceptions and behavior. Turner (1985) has long argued for the centrality of human organization and change stemming from actors at the micro-level seeking rewards within a macro context. From a process theory perspective, the macro-micro dimensions continually impact, influence, and change one another over time.

Given that soldiers and family members bring their own expectations and observations into an organizational environment that has its own norms and values, the reconciliation of organizational, family, and individual expectations becomes a multidimensional problem. In the past, much of the previous research suggested that larger organizations had less flexibility than individuals, and therefore that individuals adapted to organizational demands. The reverse was not typically true.

Systems theory suggests a somewhat different process. That is, organizations also adapt to changes that are made by groups of individuals, particularly if the result of individual behaviors has significant consequences for organizational performance. In the case of the Army, it is clear that organizational performance at the unit and larger levels is influenced by individual expectations and behaviors, suggesting that organizational change needs to be incorporated into the model.

Feedback mechanisms, another component of general systems theory, also need to be considered in our theoretical framework. Even though individual retention and readiness behaviors are of utmost concern to our research and to the Army, the consequences of those behaviors in the aggregate have impacts on the Army at the larger level. For example, if retention rates drop, the Army must consider alternative policies and support programs that will modify the environment and make the Army a more attractive place in which to live and work. Likewise, if readiness behaviors are negatively impacted upon by family demands, the Army is in turn affected, and may need to make appropriate adjustments to improve performance at individual and unit levels. It should be noted that policies that support readiness do not always have parallel impacts on retention. For example, some readiness policies and practices may create family separations. Retention may be influenced negatively by them while readiness is influenced positively.

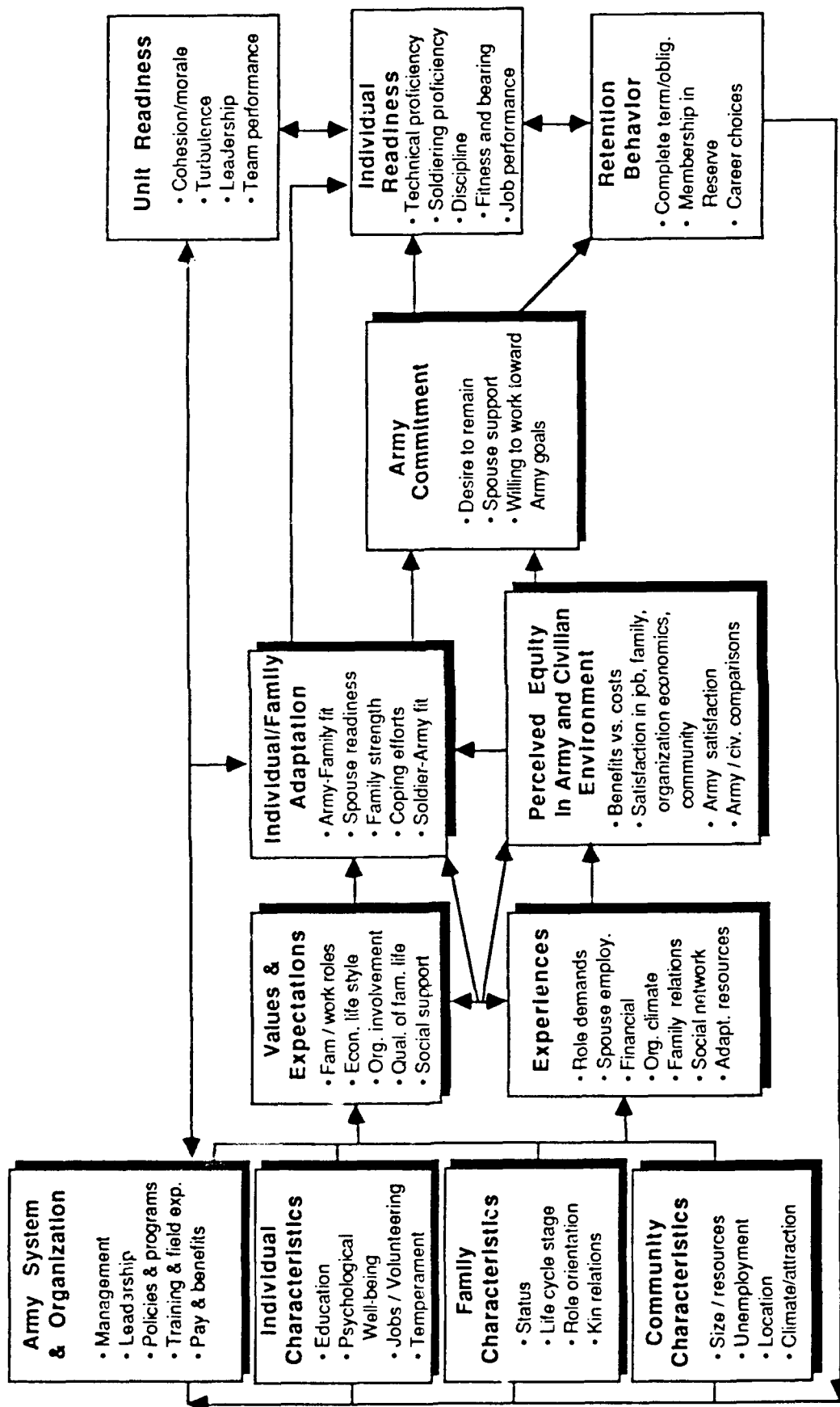
PROPOSED THEORETICAL FRAMEWORK

The theoretical framework proposed in Exhibit 2-1 represents a set of hypothetical linkages between the major constructs that are proposed to predict retention and job performance behaviors among military personnel. Looking at the framework from right to left the reader can follow the paths of influence and identify the factors that are hypothesized, directly and indirectly, to affect other factors in the model. These paths represent the major hypothesized linkages to constructs to be examined in the research and simplify the presentation of propositions that will be tested over the course of the investigation. Under each of the constructs identified in the model is a list of dimensions that are proposed to represent the constructs in an analytical model. Further specification of the relationships between constructs is included later in this chapter.

The major criterion variables in the model remain those that are of primary concern to the Army Family Research Program, namely retention behavior and the individual and unit readiness of active duty personnel.

Member and spouse commitments to the Army are expected to be major predictors of both retention and readiness behaviors. Commitment is a consequence of perceived equity in the system as well as adaptation to it. From commitment stems an inclination to remain in the system, i.e., retention, and the propensity to perform according to system requirements, i.e., readiness.

ARMY FAMILY RESEARCH PROGRAM ELABORATED THEORETICAL FRAMEWORK



Member-Spouse Interaction

Of course, commitment is not sufficient to predict job performance and readiness behaviors alone. Job performance behaviors are also hypothesized to be dependent upon job skills and materials, as well as the behaviors of others. Thus, Army leadership and training are likely to be important elements in the theoretical model, and vital to an understanding of individual and unit readiness.

A major predictor of Army commitment is hypothesized to be the perception of equity and the rewards and costs associated with being in the Army versus being in a civilian environment. As exchange and equity theories suggest, behavior is motivated by interpretations of the balance between rewards and costs associated with environmental circumstances. Unlike some purely economic exchange models, however, this model reveals that perceptions of equity are driven by much more than monetary considerations. The five areas proposed in this model for which equity is sought are the job, the community, the organizational culture, economic status, and the family (Croan, Bowen, Farkas, Glickman, & Orthner, 1986).

In each of these five proposed areas, individuals examine the benefits and costs that are associated with their circumstances at any particular time. For example, individual soldiers or spouses may interpret as job costs such conditions as long hours, physical demands, and barriers to spouse employment. These costs can be overcome by rewards that are associated with economic security, camaraderie, sense of excitement, and a belief in the values of the organizational culture. The balance between rewards and costs is equity. But individuals may be willing to accept inequitable situations in the short term as long as

there are prospects of resolutions to the imbalance through such increased rewards as unusually high retirement benefits, commitments to national security, or possibilities of promotion.

Equity in the family domain can be similarly described. Husbands and wives often look at their marriages in terms of the extent to which they are receiving appropriate benefits for appropriate costs (Levinger, 1979). A wife, for example, may be willing to put up with the costs of long periods of separation, frequent moves, or inadequate housing if she feels that her children receive a good education, that relocation provides exciting places to visit, and that her husband's happiness encourages her support for his choices.

The theoretical framework goes further to suggest that these perceptions of equity can also be influenced by perceptions of the rewards and costs in an alternative environment. These alternative perceptions are much more hypothetical than those actually experienced in the current environment. They influence people's behavior nonetheless. If the ratio of Army rewards to Army costs is perceived to be significantly worse than the ratio of civilian rewards to civilian costs, commitment to the Army is likely to be lower. Subsequent decisions to stay in or get out of the service will be affected, as will subsequent performance. If, on the other hand, people are either unaware of civilian alternatives or they have a negative attitude towards civilian jobs, (i.e., they see the jobs as less rewarding and/or the costs as greater), they will probably be unwilling to make a change and they will be more willing to depend upon Army performance criteria in their military

jobs. In a sense, this is a micro explanation of what the ACOL model (Black, Hogan and Siegel, 1987) suggests at the macro level for military personnel retention decisions.

One of the important hypothesized consequences of perceived equity in the system is personal and family adaptation to the system. It is anticipated that families who do consider the Army a fair and equitable system will be more likely to behave in ways that conform to the expectations of that system. Adaptation refers to the adoption of behaviors and cognitions that link the individual and the family to the requirements of their organizational environments. As an example, family adaptation should result in spouse readiness-related behaviors that anticipate potential separations due to Army demands on the soldier. Likewise, individuals and families should exhibit effective coping skills that represent an understanding of system requirements and an effective use of the resources that are available to them.

Preceding these perceptions of equity and adaptation are the needs, expectations and experiences that individuals have in their job, family, and community environments. It is proposed that these perceptions and behaviors that influence job commitments and outcomes originate in people's cognitive framework of their observations and expectations about organizational and relational contexts (Fishbein & Ajzen, 1975). From these observations and expectations they make judgments about the rewards and costs associated with their current situation. These observations and expectations then form the basis for the adaptations that people make to their circumstances.

Expectations and experiences are evaluated on a number of different dimensions -- the job, the family and the community environments appear to be the most salient. Theoretically, these three areas -- job, family and community -- also provide domains for perceptions of differences between expectations and experiences, thereby increasing the potential variance in the analytical model that will be developed from this theoretical model.

To use an example, it is proposed that individuals come into the Army with certain expectations about social support to gratify their relational needs. Their experiences in the Army can modify these expectations and can also offer a new definition of reality that may or may not be in concert with expectations. Throughout one's experience in the Army, expectations and definitions of reality are likely to change. These changes will create varying degrees of satisfaction and equity in the community domain. Community and family support programs play a part in this equation by altering people's expectations for support or providing new support experiences. Inadequate programs can negatively impact on people's attitudes by delivering less than what people expect or by raising expectations beyond what programs can deliver. Either of these scenarios will probably increase dissatisfaction with community programs and serve as a negative factor in soldier job performance and retention.

Undergirding this theoretical framework are several major background and conditional constants that should be taken into account in examining the hypothesized relationships. These conditional constructs include Army organization, individual, family and community

characteristics. These conditions are not considered causal in the model since it is unlikely that they can always be appropriately sequenced prior to the environmental factors that influence individual and family perceptions. They remain exogenous in the model, but not as predictors. For example, family life cycle stage may be a factor influencing expectations and experiences, but it is not predicted that family life cycle stage causes these expectations and experiences to come about. Since the effects of family life cycle are likely to be more associational than causal, the theoretical model must be examined under various conditions of the family life cycle rather than being predicted by family life cycle stage. Nevertheless, training and temperament may be predictors of job performance and readiness since these factors have been demonstrated to directly influence performance outcomes.

To summarize, it is hypothesized that soldier retention and readiness behaviors are the result of cognitive processes and behavioral adaptations that result from individual and family motivation to behave in ways that maximize receipt of benefits from environments. Individual and family behavior and adaptation are influenced by perceptions of an equitable situation vis-a-vis alternatives. These perceptions are the result of expectations that people bring to their situation, and observations they make which must be reconciled with those expectations. The family is an important part of this hypothesized framework since it represents an immediate context within which observations and expectations are negotiated. Family members interpret their situations differently from soldiers. Because of their proximity and

potential for interaction, family perceptions heavily influence soldiers and, therefore, can impact on readiness and retention related behaviors.

This theoretical framework is not considered by the research team as a static model. Rather, it is expected to be modified as new data are analyzed and additional reviews of the literature are conducted. This flexibility is necessary because of the length of the project and the multidimensional nature of the theoretical framework and the research approach.

THE THEORETICAL FRAMEWORK AND THE RESEARCH AREAS OF FOCUS

Chapter 1 introduced the four major foci of the Army Family Research Program: (1) family adaptation; (2) retention; (3) readiness; and (4) spouse employment. The paths that link these research areas have been discussed in the general theoretical model above. Nevertheless, there are specific constants and relationships between them that lend themselves to elaboration within research areas, focusing on particular constructs in the theoretical model.

The four research area frameworks identified below should be considered further specifications of the overall theoretical framework. The relationships identified are to be interpreted as providing a better foundation for the hypotheses to be tested within the investigation. Two exhibits are presented for each research area framework. The first exhibit is a replication of the overall theoretical framework with portions essential to the research area shaded in gray. The second exhibit is the

internal path of constructs for the measurement of direct and indirect influence on each research area's criterion construct.

The Family Adaptation Framework

The concepts of family adaptation and family strength are important dimensions of this project. In most previous studies of retention and readiness, family variables have either been ignored or treated superficially. The potential importance of family adaptation, however, is illustrated in the overall theoretical framework proposed above. In this model, family adaptation is treated as an independent variable predicting retention and member and unit readiness. Family adaptation is influenced by the balance of expectations that individuals and families have for their environment versus the actual experiences that they receive within that environment. It is this ratio of expectations to experiences that influences Army-family fit, a component of family adaptation. In addition, these perceptions influence beliefs about the equity of rewards and costs in the Army as well as satisfactions associated with Army life. The relationships between these constructs are illustrated in Exhibit 2-2 in which the shaded areas represent constructs incorporated into the family adaptation framework and their hypothesized relationships.

Exhibit 2-3 illustrates the specific constructs, and their relationships to one another, in the hypothesized family adaptation framework. According to this model, family adaptation is influenced by family strength, adaptive resources, perceptions of equity and role demands. The theoretical tradition behind this model lies in the work on

Exhibit 2-2

ARMY FAMILY RESEARCH PROGRAM

Family Adaptation Framework Components

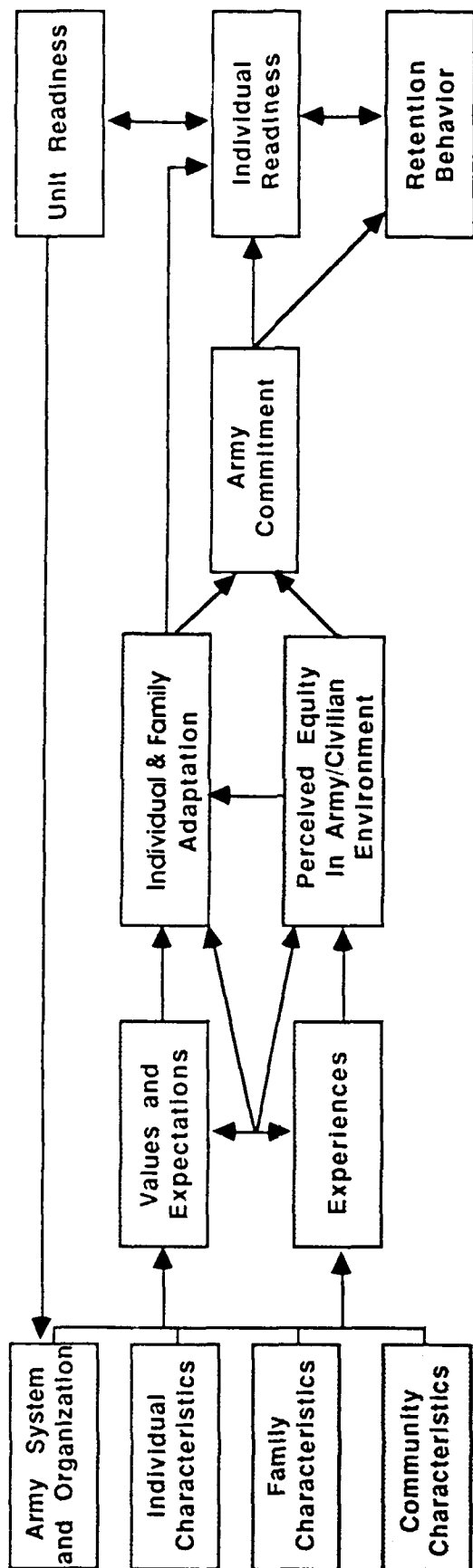
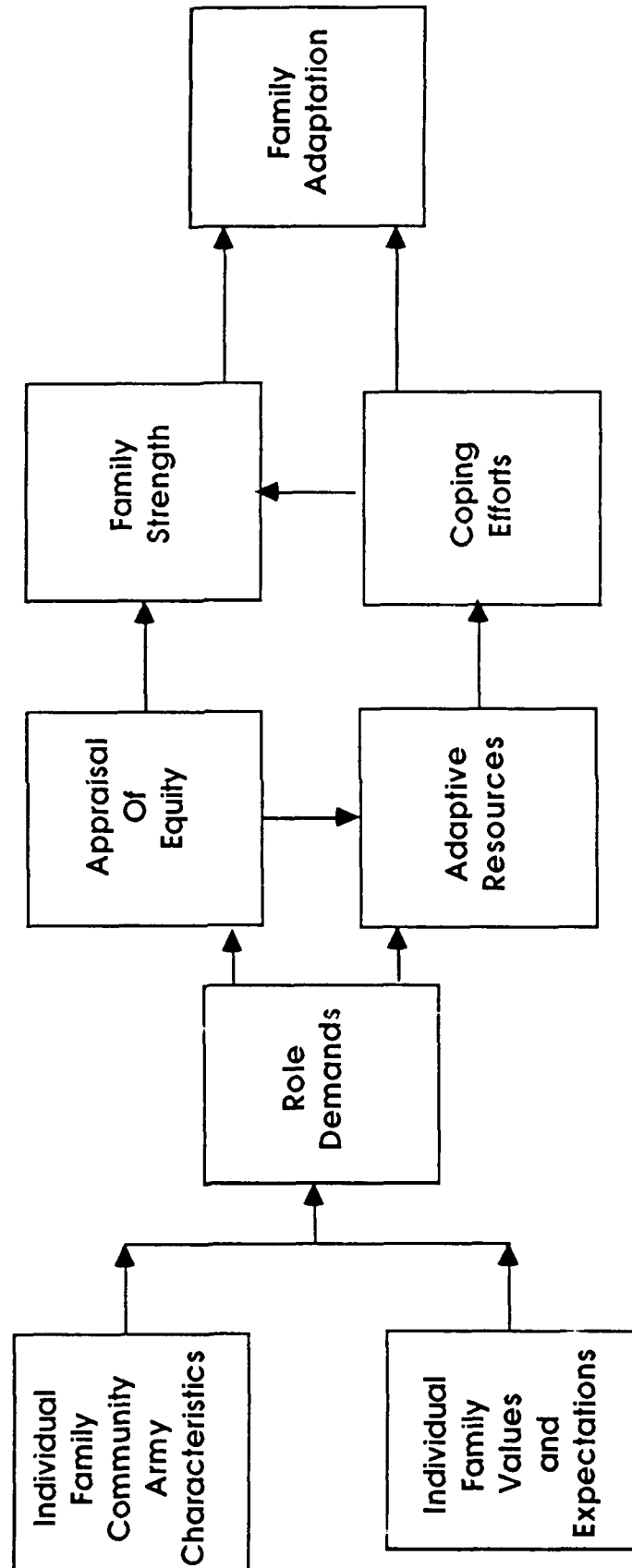


Exhibit 2-3

The Family Adaptation Framework



family strength and family adaptation in systems theory that has been developed by Hill (1949), Olson (1976), and McCubbin and Patterson (1980). According to this theoretical tradition, families incorporate into their systems multiple characteristics from their respective individual, family, community and organizational contexts. These contextual factors influence both the role demands that individuals and families experience, for example in the Army, as well as the adaptive resources that they use to assist them in meeting the demands of their environment. Among the resources used are social support and personal and family coping strategies. The values families bring into their environment also influence adaptive resources, since people's expectations influence the extent to which roles are considered demanding and in need of internal and external resources to reduce the demands.

Family adaptation, from the perspective of this model and its hypotheses, encompasses a sense of fit or agreement between the soldier, the family and the Army. Each of these environmental systems make their own demands. Exchanges are made between systems. Effective adaptation is hypothesized to depend upon the resources available to the individual and family as well as upon the belief that the exchange between the systems is equitable or fair. Thus the notion of equity, from an exchange perspective, is integrated into the assumptions of the model while the overall set of hypotheses in this family adaptation framework is developed more from systems theory, the tradition most often utilized in the family strength and adaptation literature.

From the perspective of this framework, it is apparent that individual and family adaptation serves as both an independent variable predicting retention and readiness and as a dependent variable for those who are primarily concerned with Army family strengths. The framework that is proposed suggests that families who value the Army way of life and who are prepared to accommodate to its demands are more likely to view the system as equitable and garner the resources necessary to more effective adaptation. As an example, it is proposed that families will adapt more readily to changes in location (usually PCS moves) when they consider these moves to be legitimate and when the resources are there to ease the transition that moves require. Coping with moves, therefore, is likely to be a by-product of resource utilization and strengths internal to the family relationship.

The Retention Framework

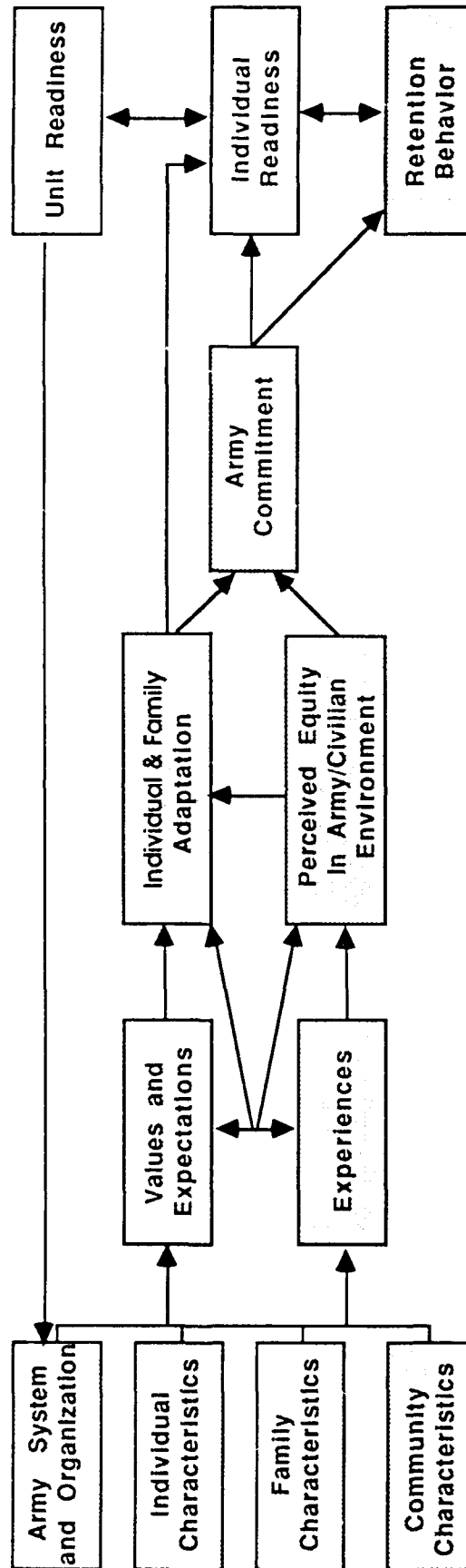
The retention of high quality personnel is of critical concern to Army leadership. Retention, therefore, is one of the major criterion constructs in our theoretical framework. The ability of the model to predict retention behavior is of central concern to the Army Family Research Program. Retention is largely the behavioral product of a choice to stay or leave and lends itself to a theoretical model that is oriented towards decision-making. Thus, exchange theory is particularly useful in predicting retention decisions and behavior.

The proposed retention framework encompasses many of the constructs included in the AFRP model is illustrated in Exhibit 2-4. Shaded areas represent constructs incorporated

Exhibit 2-4

ARMY FAMILY RESEARCH PROGRAM

Retention Framework Components



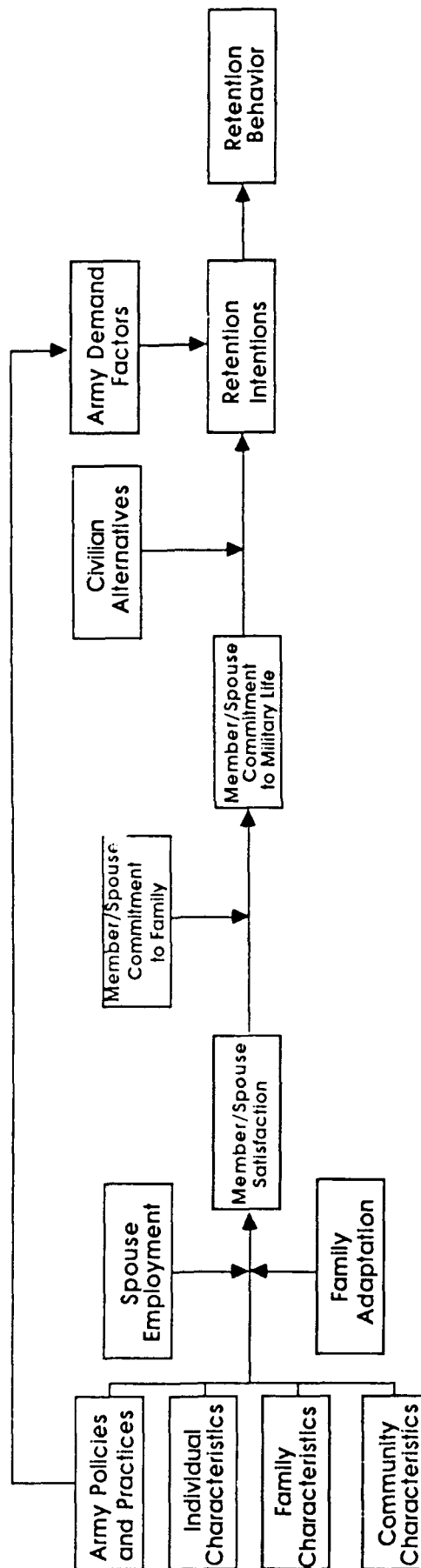
into the retention framework and its hypothesized relationships.

Exhibit 2-5 illustrates the constructs and their relationships to one another in the hypothesized retention framework. According to this model, individual, family and organizational context variables are proposed to influence soldier and spouse satisfaction. This relationship is expected to be mediated by spouse employment status/job characteristics and family adaptation. Spouse job characteristics include the type, level and location of employment, the pay, the duties and the demands. Family adaptation refers to the family's coping resources and their ability to adjust to the demands of Army living. Spouse and member satisfaction encompasses satisfaction with the various aspects of military life, including work, community and family life features.

Family member satisfaction is hypothesized to influence commitment to military life, although this relationship is probably mediated by the degree to which the member and spouse are committed to their family. Commitment to military life is hypothesized to influence retention intentions. Commitment encompasses an attitudinal/effective element, an attachment to the organization, including a preference to remain with the organization. The relationship between commitment and retention intentions should be affected by consideration of civilian alternatives. The civilian alternatives construct encompasses actual and perceived civilian alternatives as well as the corresponding perceived ease and desirability of moving into a civilian job. Commitment, in turn, is the

Exhibit 2-5

The Retention Framework



major input into the construct called family retention intentions which is a subdimension of Army commitment in the general theoretical framework.

The family retention intentions construct may represent the joint intentions of the member and spouse regarding the decision to reenlist or leave the Army. In some cases, the member may make this choice without input from the spouse; in other cases, the spouse and family may have considerable influence. Army demand factors, including retention policies and eligibility to reenlist, bonuses, retraining and location choices, affect retention intentions as well. This construct will be modeled in detail as part of a core related effort on family decision-making.

Finally, the intent to stay or leave immediately precedes the actual stay or leave behavior. The relationships between retention intentions and retention behaviors is presumed to be strong, but will be affected by Army demand functions, changes in civilian-Army alternatives and other factors that influence perceptions of the benefits and costs for staying in or leaving the Army.

It should be noted that this hypothesized framework of constructs suggests that the relationship between husbands and wives can play a major role in the retention behavior of soldiers. It is expected that the satisfaction of both members and spouses with the Army will influence their commitments to stay in the service, if they are also committed to one another. That is, the ability of the spouses to influence members is expected to be contingent on their own marital commitments. This is a potentially important hypothesis since it suggests two consequences.

First, the quality of marital relationships may play a part in soldier retention. Second, support for family adaptation to the Army should pay dividends in greater retention.

The Readiness Framework

The capability of the armed forces to respond effectively to crises is the hallmark of our national defense. Conceptually, however, readiness has been a difficult construct to assess. Therefore, this project utilizes a multi-dimensional concept of readiness and a comprehensive conceptual model that will allow a variety of factors to be accommodated.

The proposed model of individual and unit readiness includes the majority of the constructs of the AFRP framework. This is illustrated in Exhibit 2-6 in which the shaded areas represent the constructs incorporated into the readiness framework and their hypothesized relationships.

Exhibit 2-7 illustrates the specific constructs, and their proposed relationships to one another in the hypothesized readiness framework. According to this model, individual and unit readiness are predicted by the job performance exhibited by soldiers as well as the readiness of their spouses. The latter is an element of family adaptation and reflects the preparedness of the spouse for Army-required duty separations from the member. All of these variables are influenced by the commitment soldiers feel toward the Army and its mission.

Exhibit 2-6

ARMY FAMILY RESEARCH PROGRAM

Readiness Framework Components

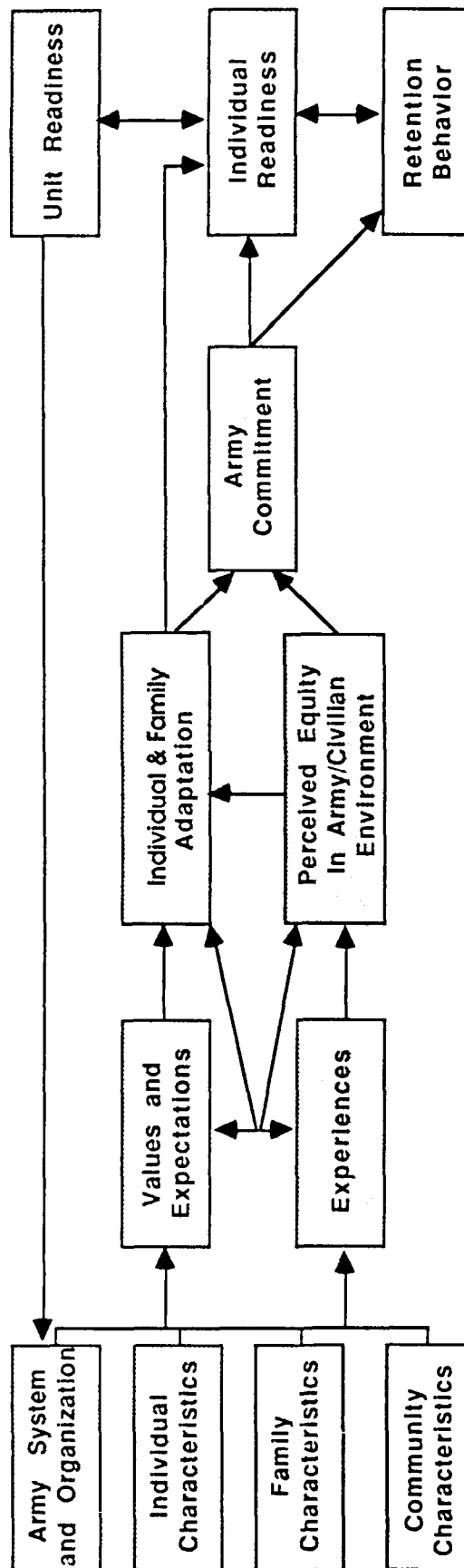
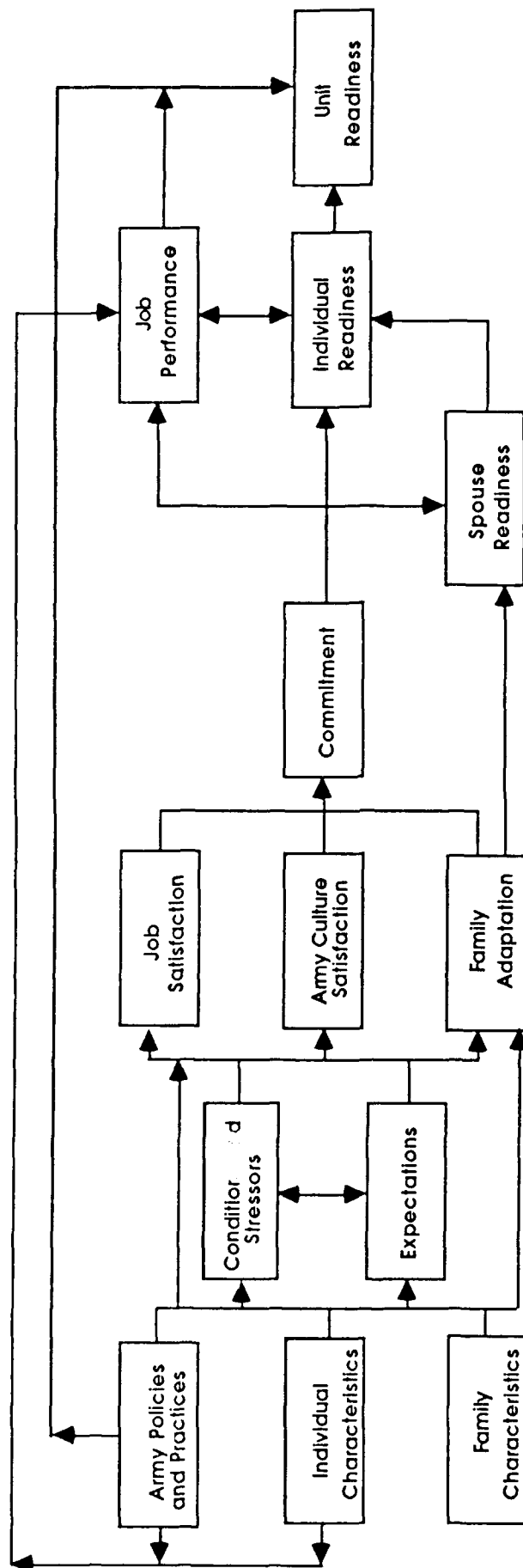


Exhibit 2-7 The Readiness Framework



Commitment to the Army, it is hypothesized, is strongly influenced by the satisfaction that soldiers are receiving from their jobs, the Army organizational culture and Army life in general. This sense of satisfaction is derived from a perception of congruency between individual and Army values and the expectation and belief that the Army is an equitable environment vis-a-vis alternatives. Satisfaction with the Army is influenced by the conditions that the soldier and spouse experience in the Army -- in their jobs, community, family, organization and economic situation -- given their expectations in these areas. Army policies and practices, individual characteristics and family characteristics are hypothesized to provide the conditions under which the hypothesized relationships will exist.

The readiness model assumes both cognitive and behavioral factors predicting individual and unit readiness. Previous literature on readiness and individual performance suggests that variables such as training and leadership are important elements in individual and unit readiness. These factors are hypothesized in the model in addition to the more equity-oriented cognitive processes that are expected to influence both soldier and spouse readiness. The readiness model is also systemic. It takes into account both micro- and macro-contextual factors that are expected to interact. This interaction sets the stage for the subsequent impact of individual readiness on unit readiness and Army mission capability.

The role that families play in readiness is hypothesized to be that of a significant intervening factor. While performance on the job is recognized to be influenced by job-specific conditions, the family is expected to

influence soldier commitments to the Army and his or her unit. In addition, spouses who have not adapted well to Army demands are likely to negatively influence the ability of soldiers to perform their jobs directly or indirectly by providing competing demands for soldier time. The competition for family and job obligations is expected to be greatest among those soldiers whose families are not adapting well to Army life.

Spouse Employment Framework

While spouse employment is not a separate construct in the overall theoretical framework, it represents a significant concern to the Army and the Army Family Research Program, given the economic status of many American families, as well as the employment desires of spouses. Spouse employment is, however, considered to be a major factor in the Army experiences construct in the framework.

Spouse employment is affected by Army life factors and in turn probably influences family adaptation, retention and readiness.

The ability of families to adapt to the Army may depend, at least in part, on the employment of spouses. For example, it is hypothesized that spouses who are employed improve the family's financial status, thereby enabling the family to purchase goods and services that facilitate family adaptation. This adaptation, in turn, improves family support for the soldier and the Army, and increases retention and readiness.

Because of its importance, a separate spouse employment framework and hypotheses are proposed to examine determinants of Army spouse job/career outcomes and to explain their role in the major criterion variables in the research. The portion of the AFRP framework that addresses the spouse employment hypotheses is illustrated in Exhibit 2-8.

The specific constructs and their relationships to one another in the hypothesized spouse employment framework are illustrated in Exhibit 2-9. According to this model, spouse employment is proposed to be an important intervening factor between the conditional constructs in the model and family adaptation, soldier readiness and retention. The spouse employment framework is built on the assumptions of the overall theoretical framework, with both exchange and systems elements implied in the hypothesized relationships.

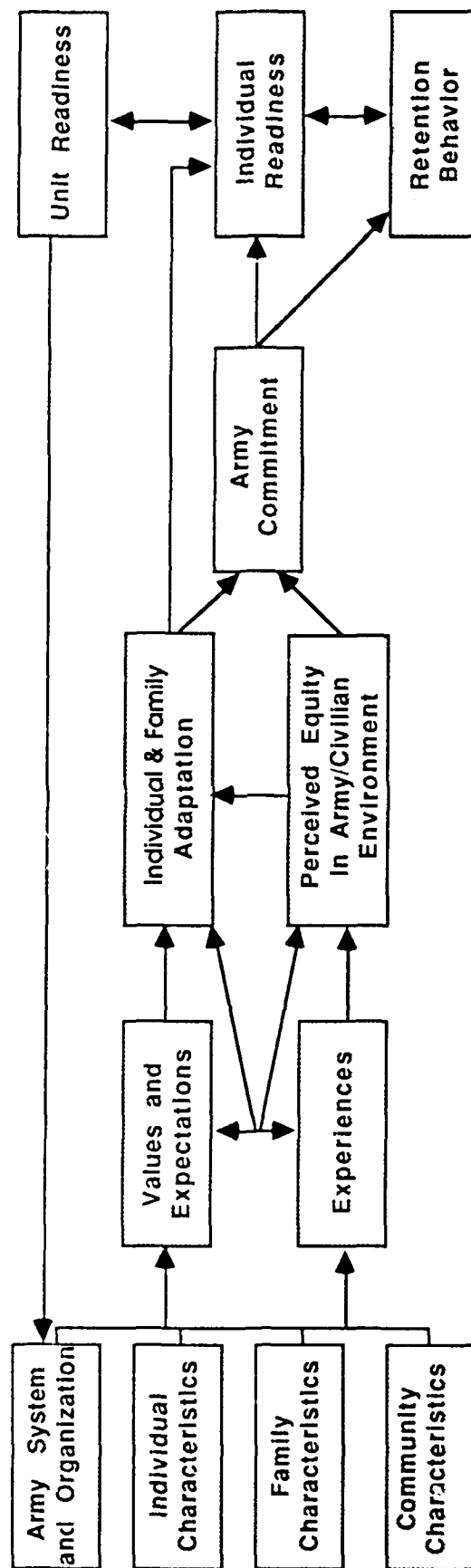
The framework proposes that spouse employment is influenced by both individual and family factors as well as Army and community factors including such conditions as education and training, employment history, family needs, labor market conditions, and employment programs. The spouse employment construct itself includes current experience as well as work history and long term goals.

Spouse employment is expected to influence family adaptation, readiness and retention through its influence on spouse satisfaction and evaluation of civilian alternatives and Army commitments. Spouse employment affects these constructs through a set of mediating factors which include the family financial status, its social resources and the spouse's self-esteem and coping skills. These latter

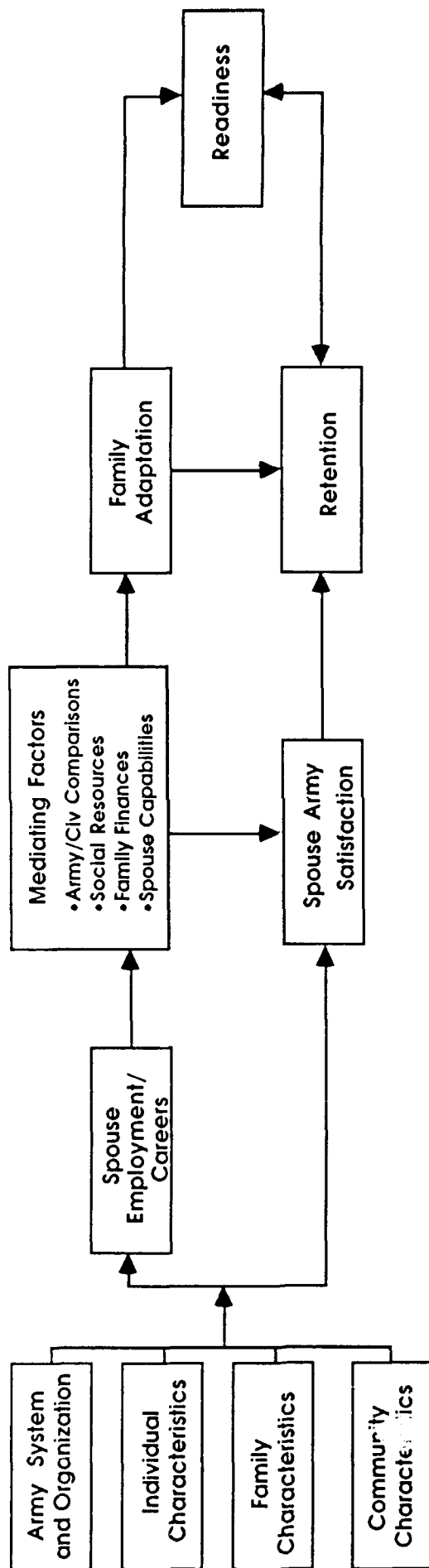
Exhibit 2-8

ARMY FAMILY RESEARCH PROGRAM

Spouse Employment Components



Spouse Employment Framework



conditions all represent personal or relational benefits likely to be influenced by spouse employment. The results of this assessment are hypothesized to have a direct influence on spouse satisfaction with the Army and the major criterion variables of the research.

Spouse employment may affect individual soldier readiness through several means. A working spouse may reduce pressures on the soldier to take a second job, which could affect job performance. Conversely, if spouse employment leads the soldier to assist more with family responsibilities (for instance, taking a child to a doctor's appointment), it could result in time lost from the soldier's daily work. At another level, higher family income from spouse employment coupled with increased spouse coping skills and resources may all reduce the soldier's concerns about family when deployed or on temporary duty (TDY).

The effect of spouse employment and employment/career experiences on retention may, in fact, be either positive or negative, depending, at least in part, on the spouse's job/career/family life goals and the perceived opportunities to achieve those goals within Army life. From a comparative decision-making perspective, if couples perceive that they, as a couple and family, would be better off outside the Army than in, they are more likely to leave. To the extent that Army life makes it difficult for spouses to obtain jobs that pay well, satisfy, or allow career development, opportunity for spouse employment may be an important factor in the retention decision. Conversely, programs and policies that help to provide job/career opportunities and demonstrate Army commitment to this goal may have positive effects on

retention. Examples include policies that enhance spouse access to civil service positions and programs that seek to increase spouse job capabilities and opportunities in the civilian sector. If research data indicate that high performing soldiers are especially likely to be married to spouses who want good job/career opportunities, the retention effects of supporting spouse employment may be particularly important for the Army.

In summary, Chapter 2 has described a theoretical framework for addressing questions of family factors in retention and readiness. The framework, based on exchange theory and general systems theory, provides a basis for developing hypothesized analytical models to explain how family and Army variables influence key outcomes of concern: family adaptation, spouse employment, retention, and readiness. The next chapter explains how these models help to define the information objectives and research strategies for the Army Family Research Program.

CHAPTER 3: THE RESEARCH STRATEGY

The challenge of the Army Family Research Program is to illuminate extremely broad and complex questions about the relationship between families and the Army mission, while also delivering concrete recommendations for program and policy changes. It requires a research strategy which is broad in scope but focused in outcome, as well-grounded in theory as it is in the practical realities of Army life.

The planned research strategy for the AFRP is guided by these dual perspectives. The strategy was developed in a two step process. The first step was to refine the project objectives, specifying in greater detail the optimum outcomes or products that the research program could deliver to the Army to meet Army needs. The second step was to determine the research methods and activities needed to produce those outcomes, taking into account the time frame and resources of the research program.

This chapter identifies the intended outcomes of the program and provides an overview of the major research activities planned to accomplish them. These activities are then discussed in detail in Chapters 4-7.

RESEARCH OUTCOMES

The research questions posed in Chapter 1 are extremely broad in scope, as are the frameworks presented in Chapter 2 to describe them. Given limited time and resources, it is essential that the AFRP prioritize its research questions

identifying those research outcomes that are most valuable to pursue.

In prioritizing, we considered two primary criteria:

- The ability and commitment of the Army to use the information generated; and
- The likelihood of research success in establishing relationships and producing useful findings.

In addition, we agreed that we had to focus on family-centered issues, treating non-family factors related to retention and readiness only as control or mediating variables. Choices were made based on:

- Findings from the first year's literature reviews, secondary analyses, and field studies;
- Findings from interviews and meetings with Army leadership, primarily in the Community and Family Support Center; and
- Results of a structured series of brainstorming and review sessions involving project and ARI staff.

One conclusion of these assessments was that there are two different types of desired outcomes for the project:

- Information Outcomes, which provide quantitative information to help Army staff offices assess and document the relative importance of different types of family issues to Army mission objectives; and

- Policy/Program Outcomes, which provide guidance for line managers on how to design improved policies and practices to address those family issues that have the greatest potential impact on family well being and the Army mission.

The desired outcomes and supporting research objectives are further articulated in Exhibit 3-1, and Exhibit 3-2 illustrates the products and applications that flow from each type of objective. The information objectives will be met by developing large-scale, quantitative models that explain how family factors and issues affect family adaptation and satisfaction, as well as Army commitment, retention and readiness for different types of soldiers and families in varying circumstances. The findings from these family factors models will assist DCSPER, CFSC, MACOM and other Army staff decision-makers to determine which family concerns are of greatest priority and to assess the probable benefits to the Army of investments in different types of family programs or policies.

The policy/program objectives will be met through a combination of quantitative and more open-ended, qualitative research that leads to the design of specific policy and program options to address key family issues. These options will be designed to be used by line family program managers, after experimental testing and evaluation.

The information and policy/program objectives are closely related. To illustrate with a hypothesized case, the family factors models might produce findings indicating that the presence of effective sponsors in Europe significantly affects successful adaptation to PCS moves to USAREUR, decreases time loss to units by 15%, decreases

EXHIBIT 3-1

OUTCOMES AND OBJECTIVES OF THE ARMY FAMILY RESEARCH PROGRAM

OUTCOMES

- IMPROVED INFORMATION FOR DECISION-MAKING: Integrated, comprehensive estimation of the effect of family factors and community support on readiness and retention.
- IMPROVED POLICIES AND PROGRAMS: Specific recommendations for enhancements in policies, programs and practices to support the partnership between the Army and its families.

INFORMATION OBJECTIVES

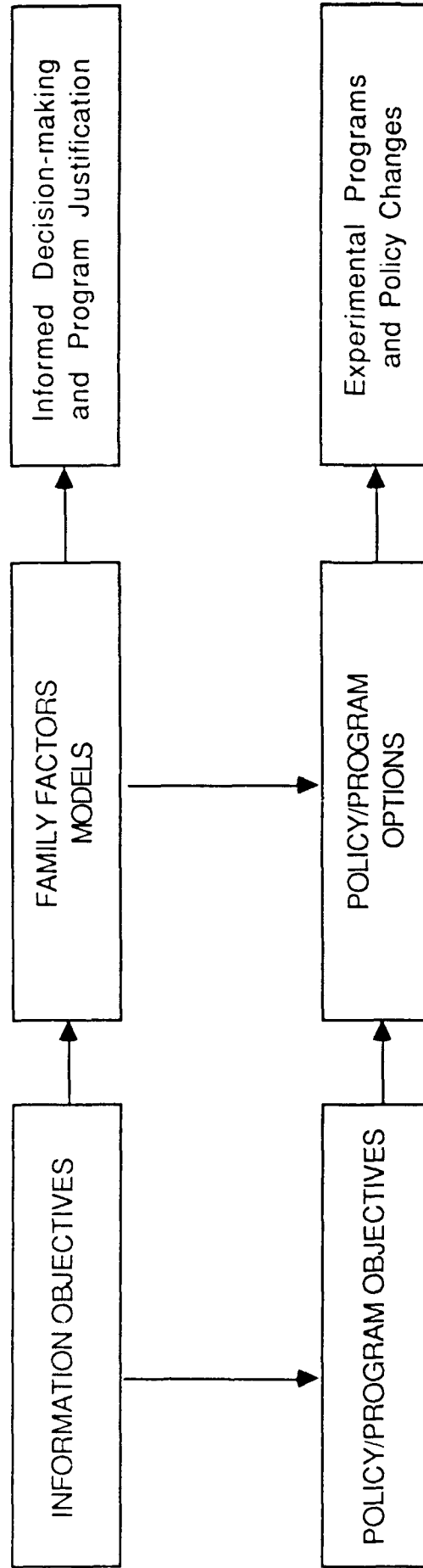
- Provide quantitative models linking family factors, family adaptation, retention and readiness.
- Provide models linking the effects of community and family support programs on family adaptation.
- Provide models linking the effects of spouse employment and spouse employment programs on family adaptation, retention, and readiness.
- Provide understanding of the interaction effects of family life cycle and soldier career cycle with respect to family adaptation, retention and readiness.

POLICY/PROGRAM OBJECTIVES

- Provide strategies for increasing family adaptation and readiness by strengthening leadership support for families.
- Provide family-focused intervention strategies to enhance the "Total Army" retention of quality soldiers.
- Provide strategies to decrease the stress on families caused by relocation, separation and other demands of Army Life.
- Provide job and career development strategies for Army spouses so as to increase family adaptation and support for mission objectives.

EXHIBIT 3-2

INTER-RELATIONSHIP OF AFRP OBJECTIVES AND OUTCOMES



early returns by 20%, and increases retention of married soldiers after the second tour by 10%. This information might lead DA and MACOM leadership to place renewed emphasis on the sponsorship program and justify additional resources for it if necessary. Qualitative research on successful and unsuccessful sponsorship experiences might help identify better policies and procedures for operating effective sponsor programs in conjunction with other relocation support services. In general, the model policy/program options provide a vehicle for the field to act on the information gained through the quantitative modeling; while the findings from the family factors models provide hard justification for the expenditure of resources on the policy and program options.

Information Objectives

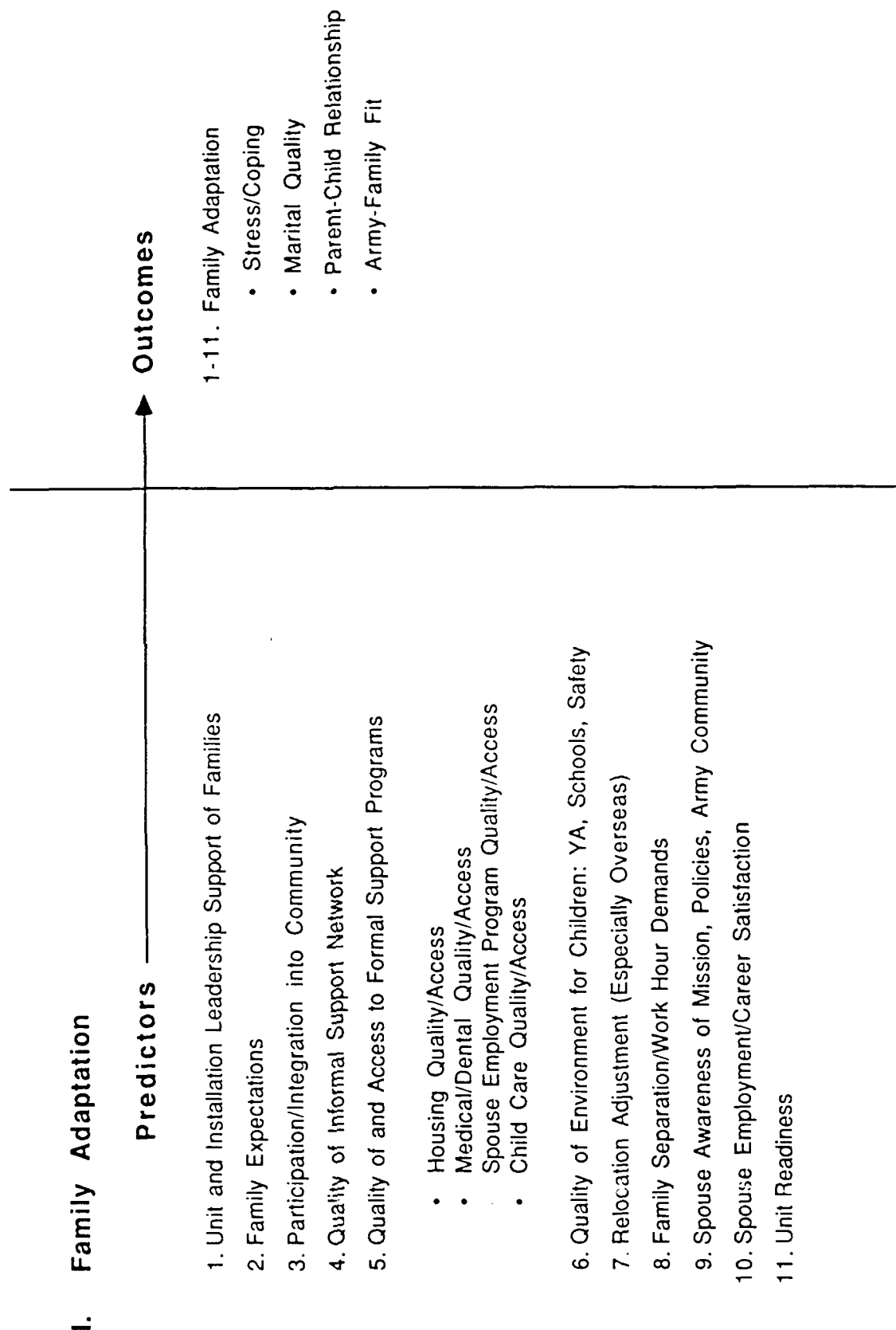
The information objectives require the development of quantitative models that link key family related variables, directly and indirectly, to retention and readiness. As suggested in Chapter 2, much of this modeling requires linking key family and Army experiences with successful family adaptation to the Army, and then establishing the link between family adaptation and soldier retention and individual (and ultimately unit) readiness. Exhibit 3-3 depicts the linkages that we believe are most important to examine within these models, based on the criteria cited earlier of both Army relevance and likelihood of research success.

The linkages are organized into four categories that reflect the primary dependent variables described in Chapters 1 and 2: Readiness (individual and unit),

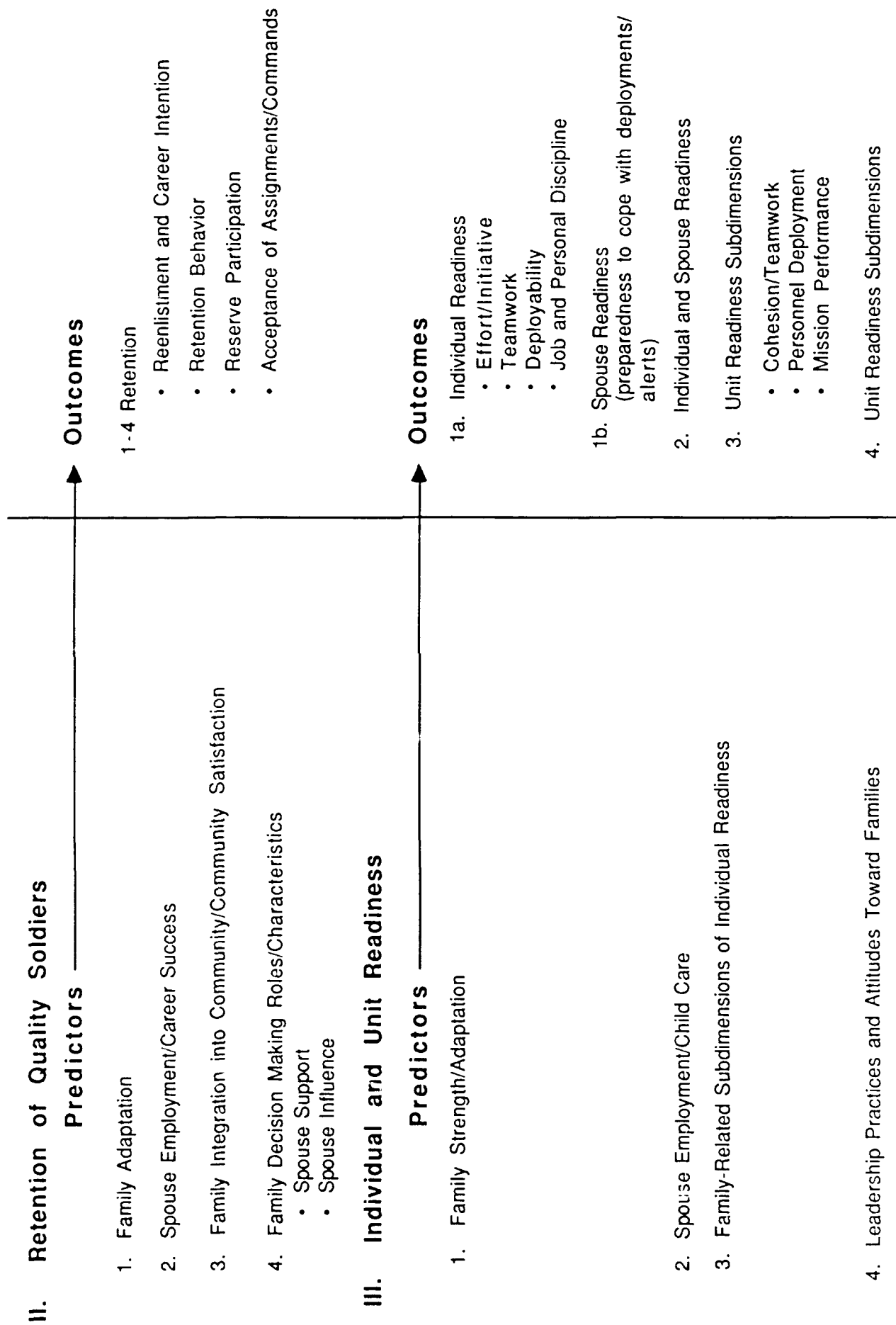
EXHIBIT 3-3

PRIMARY RELATIONSHIPS TO BE EXAMINED IN FAMILY FACTORS MODELS

(Note: All findings controlled for family life cycle/demographic characteristics)



PRIMARY RELATIONSHIPS TO BE EXAMINED IN FAMILY FACTORS MODELS (CONT'D)



PRIMARY RELATIONSHIPS TO BE EXAMINED IN FAMILY FACTORS MODELS (CONT'D)

IV. Spouse Employment

Predictors

1. Spouse Capabilities
 - Education/Training
 - Work History
 - Job Skills
2. Soldier Career Demands
 - Job Demands (hours, separations)
 - PCS Moves/Relocation
3. Community Factors
 - Labor Market
 - Child Care/Other Support Services

Outcomes

- 1-3. Spouse Employment/Career Development
 - Employment Rates
 - Job Satisfaction
 - Earnings

retention, family adaptation, and spouse employment. Family adaptation and spouse employment are viewed as both dependent and independent variables. In the theoretical framework they are intermediate outcomes that directly and indirectly impact readiness and retention. Within each of the four categories, the component factors listed on the left hand side of Exhibit 3-3 are hypothesized to impact the corresponding component factors enumerated on the right hand side. For example, in Category III, it is hypothesized that the level of overall successful family adaptation to Army life will be positively related to several dimensions of individual readiness, including the soldiers' level of effort and teamwork, readiness to deploy, and avoidance of disciplinary problems (e.g. alcohol abuse, absence from duty) that affect performance. Similarly in Category I, it is hypothesized that the level of unit readiness, construct #11, is inversely related to family stress, since it is hypothesized based on our developmental research that spouse anxiety and concern for family well-being (especially for young marrieds with children) is reduced if the unit is perceived as being well prepared for its combat mission.

We have not attempted to list all of the hypotheses to be tested in the Family Research Program on Exhibit 3-3. Such a list would run into the thousands. Rather this exhibit identifies only the types of findings which we believe are possible (based on theory or past research) and which will be of greatest use to the Army research sponsor (CFSC).

These hypothesized linkages help to guide the research design. AFRP research should be designed to ensure that each relationship indicated in Exhibit 3-3 can be

quantitatively specified so that the importance of each factor can be assessed. For example, the research should help the Army determine the relative value of investing resources in improving Relocation Adjustment (construct #7 in Category I, Family Adaptation). Specifically, the research should specify how significantly the relocation experience affects the level of family adaptation for different types of families (e.g., those with very young children or those with adolescents). These family effects should then be able to be translated into measurable effects on retention (via construct #1, Category II) and on individual readiness (via construct #1, Category III).

Policy/Program Objectives

The information generated to address the priority knowledge objectives tells the Army which family concerns are most important to address and why, but not how to address them. Carrying through the relocation example above, if our research demonstrates that the Army could measurably increase retention and readiness by reducing relocation stress for certain types of families, the Army then needs to know what kinds of assignment policies and support programs are most likely to reduce relocation stress.

Using the same criteria and assessment process described at the outset of the chapter, six areas were identified as being the most valuable areas in which to develop detailed policy and/or program recommendations. In each of these areas, the AFRP objective would be to determine how the Army can best intervene, describe a model intervention (training module, improved support service,

policy change, etc.) and describe and where feasible, implement methods to test and evaluate the model intervention on an experimental basis. The interventions will address both policy changes that could be made by the Army to be more responsive to family needs as well as supports that could be provided to families to help them adapt to Army mission requirements. The six areas are:

- Family-oriented training and personnel development for unit level leadership (officers and NCO's) in strategies to support families and readiness;
- Family-oriented training and personnel development for top level installation leadership in strategies to support families and retention;
- Family-oriented incentives and counseling strategies to influence soldier career decision-making;
- Strategies to enhance spouse employment and career success;
- Strategies to minimize relocation stress and disruption; and
- Strategies to reduce the stress and mission impacts of family separations.

In summary, then, the Army Family Research Program is designed to meet two types of objectives. Knowledge objectives are met through the development of quantitative family impact models that relate a series of Army and family factors to family adaptation and retention and readiness outcomes. Policy/program objectives are met through the development of a set of program/policy options designed to address family factors that have a significant impact on retention and readiness.

RESEARCH ACTIVITIES

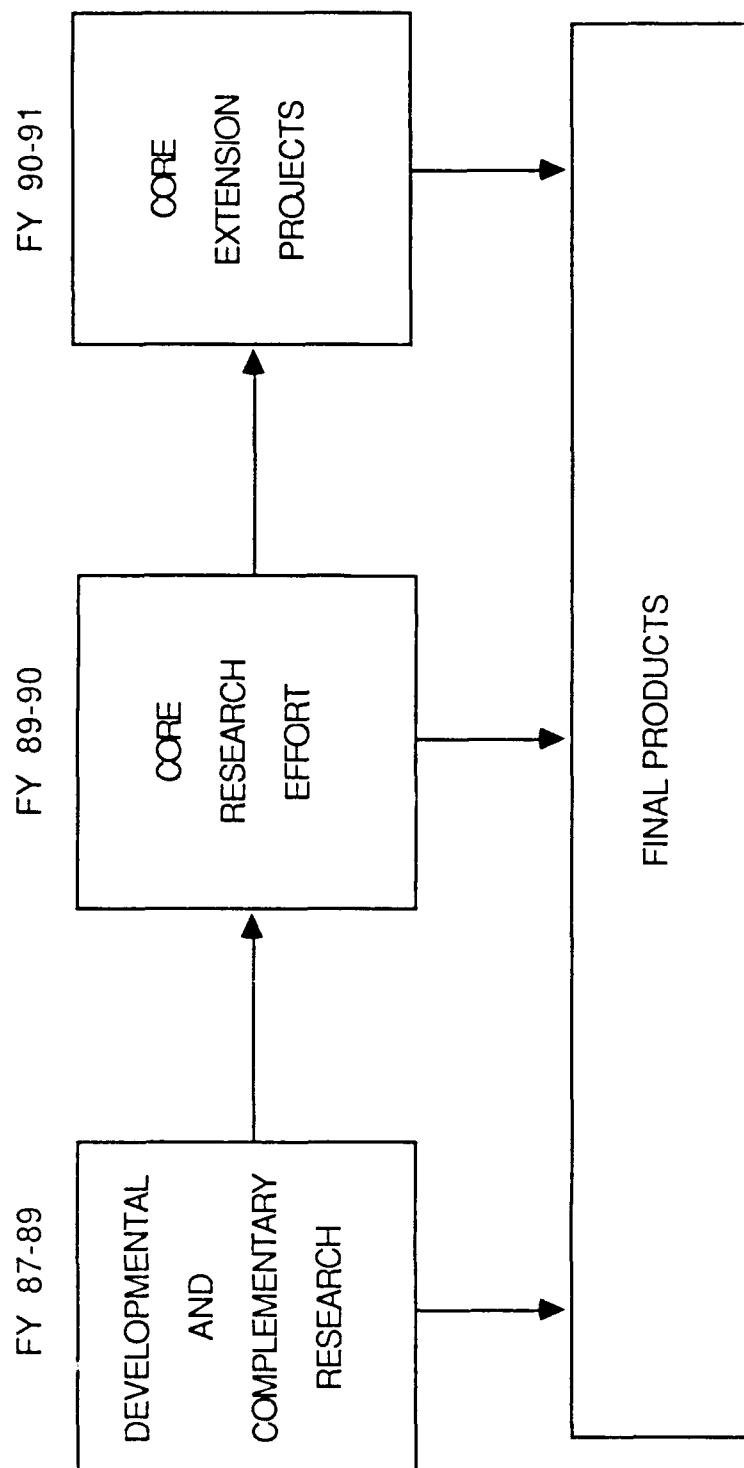
To develop the family factors models, large scale data bases are needed. A significant amount of modeling can be done from existing data bases, such as the 1985 DoD family survey or DMDC files. Early AFRP investigations revealed, however, that no existing data bases cover the full range of relationships specified in Exhibit 3-2. In particular, no existing data source provides a means to link family adaptation measures with measures of individual performance and readiness. These linkages would be possible only with a major new multi-method data collection effort.

To meet the program/policy objectives of the AFRP, a new large scale quantitative data collection effort is helpful, but not sufficient. Much more intensive and process-oriented information is needed to understand how families adapt to varying conditions and how the Army could adjust its actions to promote better outcomes for families and the Army.

Consequently, a three-pronged research strategy, depicted in Exhibit 3-4, was developed to meet the program's objectives. At the heart of the strategy is the Core Research Effort. This will be a major new data collection effort covering a wide range of family, retention and readiness measures from multiple sources. It will provide the primary basis for developing the family factors models and meeting the information objectives of the AFRP. The Core Extension Projects will build upon the Core Research sample and data base. They will involve more intensive open-ended investigations and longitudinal follow-ups of subsamples from the Core Research in order to develop the

EXHIBIT 3-4

OVERVIEW OF AFRP ACTIVITIES



program/policy options. Supporting both the Core Research and the Core Extension Projects will be a set of Developmental and Complementary Research efforts. These activities are designed primarily to help prepare for the other AFRP research and to generate early findings on the research objectives based on existing or readily accessible data. The Developmental Research provides the foundation for all of the other components. Each of the major strategy elements is discussed briefly below.

Developmental Research

The Developmental Research has two objectives:

- To inform the development of hypotheses, measures and research designs to be used in the Core Research and the Core Extension Projects; and
- To generate preliminary reports on several of the key relationships to be studied to help meet the research program's information objectives.

To meet these objectives, each research area team is engaged in three types of activities:

- Critical reviews of the existing literature;
- Secondary analyses of existing survey and records data bases (e.g. 1985 DoD Family Survey, DMDC personnel retention records, surveys of Army Families in Europe, etc.); and
- Exploratory field studies at selected installations, involving personal and focus group interviews, critical incident workshops, small scale surveys, etc.

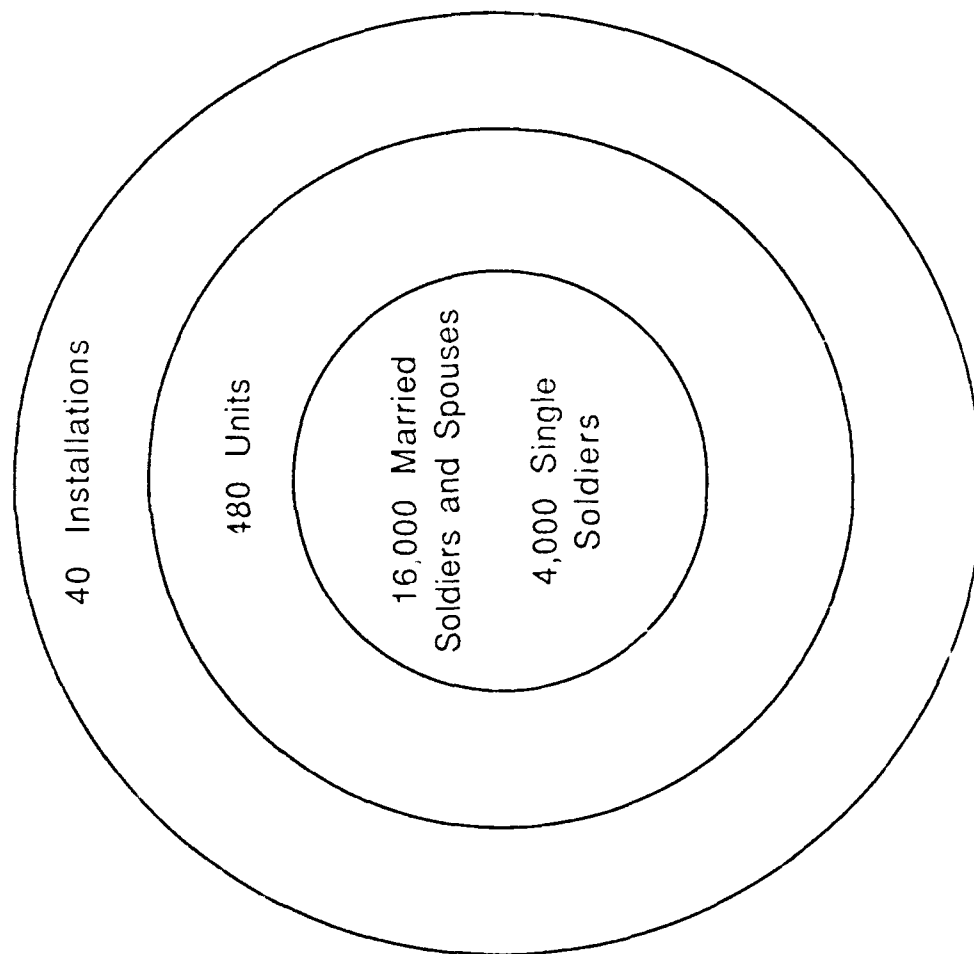
Developmental Research activities take place primarily in the first two years of the research program, and lead to 15 working papers, 4 technical reports, and 3 research reports for the user community. Reports cover a range of topics concerning family strength and adaptation, relocation, spouse employment, families and retention, families and readiness, and Army family policies and programs. Chapter 4 discusses the Developmental Research in more detail.

Core Research Effort

The Core Research Effort will be based on a nested, probability sample of 40 installations, 480 Army units, 16,000 married soldiers and their spouses, and 4,000 single soldiers (see Exhibit 3-5). This three stage sampling design will allow analyses using the installation, the unit (primarily companies), the family, and the individual as the unit of analysis. Multiple methods will be used to collect data on: individual and family demographics, attitudes, perceptions, and experiences; individual performance and career decisions; unit structural characteristics, family support practices, and mission readiness; and installation and community characteristics and programs. This data set will be analyzed to test the models hypothesized in Chapter 2 and develop validated models predicting the relationships between family factors, family adaptation, retention and readiness. The Core Research will lead to five major technical reports in the fourth year of the project, based on these analyses. The Core Research Effort is discussed in detail in Chapter 5.

EXHIBIT 3-5

CORE RESEARCH
SAMPLING DESIGN



Core Extension Research

Five Core Extension Research projects are planned.

The Career Decision-making Project will examine the process that members use to make retention decisions, with primary attention to the role of the spouse and family concerns. This effort will involve multiple follow-up surveys and interviews with a subsample of Core Research couples and will result in the design of incentives and career counseling strategies targeted toward family members and family issues.

The Unit Leadership Practices and Readiness Project will examine differences in the family-related practices and policies of units with high family adaptation and readiness versus those with low adaptation and readiness. The Developmental Research indicated that there is considerable variation among units on these dimensions. Case studies and experimental interventions with Core sample companies are proposed, leading toward manuals, procedures and potential programs of instruction (POI's) for NCO's and officers in unit leadership roles.

The Installation Leadership Practices Project will use interview, focus group and observational techniques to identify practices of leadership at the installation level (DPCA to the CG) that lead to high family adaptation, morale, and support for Army retention. A subsample of core installations will provide the basis for analysis, leading to recommended handbooks, procedures and POI designs that could become integrated into Army training for higher level leadership.

The Family Adaptation to Relocation Project will assess how relocation policies, programs, and experiences affect the well-being, commitment, and performance of different types of families. The research design calls for following a subsample of Core families through a PCS. It will result in recommendations for model policies and programs to reduce the stress and productivity losses associated with family relocations.

The Family Adaptation to Separations Project will follow couples from the Core sample who subsequently experience separations of one to six months. The research will assess how family support groups and other policies, programs, or coping strategies can reduce the stress and erosion of commitment to the Army often associated with family separations. Models for family support groups and related policies and practices will be developed based on the findings.

Each project will lead to both a technical report and a user-oriented research product, most to be produced in the fifth year of the project. The Core Extension Projects are discussed in greater detail in Chapter 6.

Complementary Research

Complementary Research efforts are not directly related to the Core Research (unlike the Extension Projects which follow-up subsamples of the Core). Rather, these complementary efforts involve other samples that enable the AFRP to enrich its coverage of key populations and issues of interest to the Army. Four Complementary Research efforts are planned.

The Model Spouse Employment Program involves the design and evaluation of a model intervention designed to increase employment and career success for Army spouses. Because of the Army's interest in early products and the availability of rich data from the 1985 DoD survey, this research was accelerated ahead of the Core Research and the development of the other policy/program options. Research begins in Year 2 and produces reports in Years 3 and 4.

The Project A/Family Effects Research is designed to take advantage of an already ongoing, large-scale, longitudinal study of first-term soldier performance. By adding a family questionnaire to the existing battery of instruments at minimal incremental cost, AFRP will be able to obtain extensive data on family factors and individual readiness, as well as data on the impact of early marriage and child-bearing on career decisions and performance. Data collection began in Year 1 with reports planned in Years 2 and 3.

The Analysis of the 1987 Annual Survey of Army Families involves analyzing data from CFSC's recently completed first annual survey of Army spouses. This analysis will yield more detailed information on a variety of family related policies and programs than will be possible under the Core Research. A report on the findings will be developed in year two.

The TPU Attritee Research Project is a special survey on the impact of family factors on attrition from Reserve Troop Program Units (TPUs), being conducted as part of a DCSPER Reserve Retention Research Initiative. A report on findings will be produced in Year 2. While the Core

Research and Extension Efforts are aimed at the active duty force, this effort will provide some parallel data on families and retention issues in the Reserve Component.

Each of the Complementary Research efforts is discussed in detail in Chapter 7.

In summary, the AFRP research strategy involves multi-pronged activities designed to meet the knowledge and policy/program objectives of the AFRP. Exhibit 3-6 summarizes the major activities, timetables and products of the project. Exhibit 3-7 provides greater detail on the schedule of activities; Exhibit 3-8 provides greater detail on the products.

EXHIBIT 3-6

AFRP RESEARCH STRATEGY

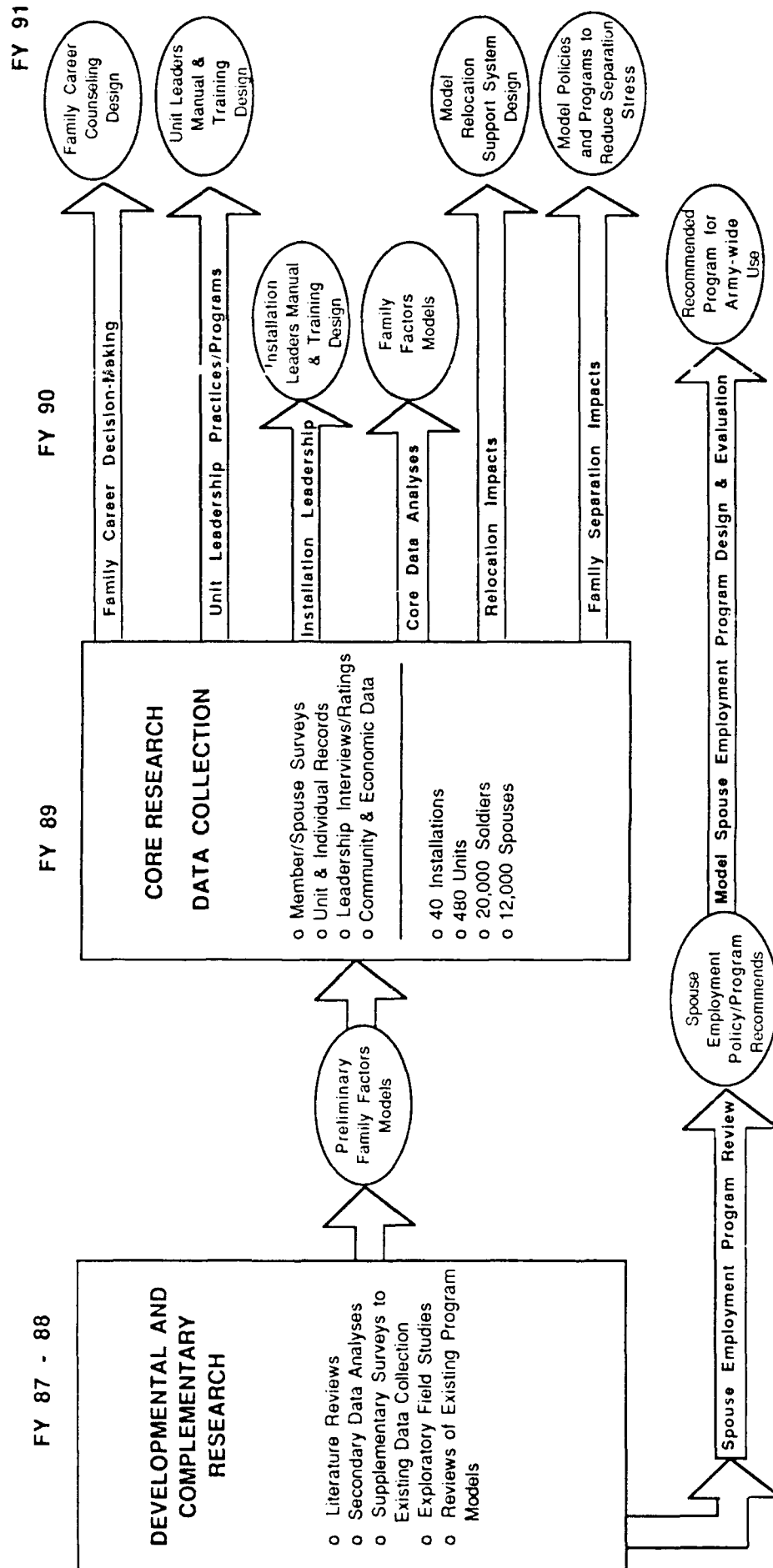


EXHIBIT 3-7 SCHEDULE OF MAJOR PROJECT ACTIVITIES

	FY87				FY88				FY89				FY90				FY91			
	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul
	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep
DEVELOPMENTAL RESEARCH																				
Family Adaptation																				
Retention																				
Readiness																				
Spouse Employment																				
CORE RESEARCH EFFORT																				
Sampling																				
Data Collection																				
Pretests and Field Tests																				
Field Study																				
Analysis and Modeling																				
Reports																				
CORE EXTENSION PROJECTS																				
Career Decision Making																				
Unit Leadership Practices/Readiness																				
Installation Leadership Practices																				
Relocation Adaptation																				
Family Separation																				

SCHEDULE OF MAJOR PROJECT ACTIVITIES (cont'd)

	FY87				FY88				FY89				FY90				FY91			
	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul
	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep
COMPLEMENTARY RESEARCH																				
Model Spouse Employment																				
Project A/Family Effects																				
ASAF Analysis																				
TARP																				

EXHIBIT 3-8

PRODUCTS GENERATED BY MAJOR RESEARCH ACTIVITIES

DEVELOPMENTAL RESEARCH

REFERENCE NUMBER	PRODUCT NAME	PRODUCT CONTENT	USER	USE	DATE OF DELIVERY
TR1	The Effect of Organizational and Family on Family Adaptation in the Army: A Model and Measures	Multivariate model of factors which explain variation in the level of family adaptation to the combination of organizational and family demands	ARI AFRP WRAIR CFSC	Generate and refine hypotheses and specify measures and relationships	11/88
TR7	Family Factors and Retention	Examination of the role of family, demography, military experience, military lifestyle and economic factors in distinguishing characteristics of those who stay and those who leave the Army; data from 1985 DoD survey augmented with additional Army administrative data	Chief of Staff DCSPER CFSC AFRP	Evaluate current retention practice, refine force management policy, document value of value of family-oriented policies, generate and refine hypotheses	9/88
TR10	Measuring Readiness and Related Family Phenomena	Literature review of factors affecting individual and unit readiness; descriptions of preliminary measures of individual, spouse, unit readiness and family factors that are likely to affect readiness	AFRP MACOMs CFSC	Provide instruments to measure individual, spouse and unit readiness, and family and other factors that impact readiness	5/88

DEVELOPMENTAL RESEARCH
(Continued)

<u>REFERENCE NUMBER</u>	<u>PRODUCT NAME</u>	<u>PRODUCT CONTENT</u>	<u>USER</u>	<u>USE</u>	<u>DATE OF DELIVERY</u>
TR14	The Employment Status of Army Spouses	Results from analyses of 1985 DoD Survey and March 1985 Current Population Survey used to compare Army spouses to wives of civilian men in the labor force	ARI CFSC WRAIR	Increase understanding of employment situation of Army spouses, Army and other factors related to employment problems, and relationship of spouse employment to Army outcomes	1/88
WPs(5)	Literature Reviews	Detailed analysis of the literature and current state of knowledge about family adaptation, military community satisfaction, retention in civilian and military settings, family factors and readiness and military spouse employment	CFSC ARI WRAIR	Aid in establishing program/policy priorities; help conceptualize and design AFRP research model	87-88
WPs(6)	Secondary Data Analyses	Analyses from the 1985 DoD Survey, 1000 Army Families, the Current Population Survey and other military data bases on family satisfaction with military environments and programs, family factors and retention, and spouse employment success	CFSC CFRC ARI WRAIR	Specify the conceptual model and constructs; inform Army audiences of early project findings; aid in making and justifying policy and resource choices	87-88
WPs(3)	Special Reports	Special reports on: Policies, Procedures and Practices which Impact Army Families, the Family Annualized Cost of Leaving (ACOL) Model, and other interim documents which contribute to later technical reports	ARI CFSC WRAIR MACOMS Family Program Managers	Analgamate information on selected topics of interest to the Army.	87-88

DEVELOPMENTAL RESEARCH
(Continued)

REFERENCE NUMBER	PRODUCT NAME	PRODUCT CONTENT	USER	USE	DATE OF DELIVERY
WP	Military Family Data Bases	Listing and description of key characteristics of 30 existing and planned military data bases	AFRP ARI WRAIR CFSC	Aid in locating research findings and designing future research.	9/87
RP1	Spouse Employment User Summary	Easy to read summary of research findings of the problems, issues and potential solutions to unemployment and under-employment among Army spouses	DCSPER CFSC MACOMs Family Program Mangers ACES CDS FLO	Assist managers in program planning and justification, and Army-wide education on family issues	5/88
RP2	Family Adaptation/ Retention User Summary	Easy to read summary of research findings of the problems, issues and potential solutions of family adaptation and retention implications	DCSPER CFSC TACC Family Program Managers FLO MACOMs	Assist managers in program planning and justification, and Army-wide education on family issues	12/88
RR1	The Research Plan for the Army Family Research Program/s Family Factors in Retention, Readiness and Sense of Community	Background for and details of all research activities planned by the AFRP	AFRP CFSC ARI SAC CFRC WRAIR	Explain purpose, procedures, and products derived from all AFRP research	3/88

CORE RESEARCH EFFORT

<u>REFERENCE NUMBER</u>	<u>PRODUCT NAME</u>	<u>PRODUCT CONTENT</u>	<u>USER</u>	<u>USE</u>	<u>DATE OF DELIVERY</u>
TR2	The Effect of Organizational and Family Demands on Family Adaptation in the Army: Primary Research Findings	Analysis of factors which determine family adaptation to the Army for different types of families, and at different stages in the family and career life cycle; includes distributions of patterns of resource utilization and variations in organizational and family demands. Implications for Army family policies and programs will be identified. The model for Army family adaptation will be tested and revised.	CFSC ARI	Increase knowledge of Army/family relationships; inform program management, policy revision and decision-making	10/90
TR6	Operational Measures	Operational definitions and measures of key concepts in the Army family adaptation model based on survey results, with recommendations made for broader application of the measurement tools and additional research needed	CFSC ARI WRALR	Use in future research and surveys for periodic pulse-taking of family adaptation issues	6/91
TR9	Relative Importance of Army Family Programs, Policies, and Practices in the Retention of Soldiers	Examination of the relative importance of these factors for soldiers at different phases of their career and family life cycles; with varying occupations, experiences, and initial expectations. Recommendations for appropriate changes in these programs, policies, and practices to increase retention; emphasis on increasing retention rates of high-performing soldiers	CFSC MACOMS	Identify possible changes in family programs and Army policies and practices that would increase retention	11/91

CORE RESEARCH EFFORT
(Continued)

<u>REFERENCE NUMBER</u>	<u>PRODUCT NAME</u>	<u>PRODUCT CONTENT</u>	<u>USER</u>	<u>USE</u>	<u>DATE OF DELIVERY</u>
TR12	Relative Importance of Army Family Programs, Policies and Practices on Individual and Unit Readiness	Discussion of the relative importance of programs, policies, and practices on individual, spouse, and unit readiness.	DCSPER CFSC ASA(M&RA) TRADOC ROTC USMA AWC	Enable Army policy and decision-makers to pinpoint the policy, program and practice changes that will positively and most effectively impact individual and unit readiness	11/90
TR15	Characteristics of Spouse Employment Success	Analysis of the factors related to the success of Army spouses in work or careers, including differences by spouses' career aspirations and needs	CFSC ACS DCP	Identify factors that contribute to successful job/career outcomes for Army spouses, for use in program planning and policy development.	10/90

CORE EXTENSION RESEARCH

<u>REFERENCE NUMBER</u>	<u>PROJECT NAME</u>	<u>PRODUCT CONTENT</u>	<u>USER</u>	<u>USE</u>	<u>DATE OF DELIVERY</u>
TR8	Career Decision- Making Factors and Processes	Detailed description of the nature and extent of family member participation/influence in the stay/leave decision and the processes by which family member influence operates	Reenlist- ment NCOs TRADOC schools Commanders	Improve reenlistment counseling and incentives for families	11/91
RP6	Strategies to Enhance Retention of Quality Soldiers	Training modules and aids for reenlistment NCOs; reenlistment decision aids for members and spouses; and reenlistment training modules for key supervisory personnel	MACOMs TRADOC schools	Design reenlistment incentives and training for reenlistment NCOs	11/91
TR13	Effects of Unit Leadership Practices on Readiness and Family Well-Being	Presentation of combined results of core information and case study of effects of unit leadership on readiness and family well-being	CFSC FLO TRADOC ROTC USMA AWC Officers Senior NCOs	Identify family-related practices of unit leaders that impact the most on individual and unit readiness to allow unit leaders to take appropriate actions to enhance readiness	10/91
RP7	Leadership Practices to Enhance Readiness and Family Support	Description of strategies for unit leaders to enhance readiness through family support	Officers NCOs	Train officers and senior NCOs on how to handle the family problems of their personnel	10/91

CORE EXTENSION RESEARCH
(Continued)

<u>REFERENCE NUMBER</u>	<u>PRODUCT NAME</u>	<u>PRODUCT CONTENT</u>	<u>USER</u>	<u>USE</u>	<u>DATE OF DELIVERY</u>
TR3	The Effects of Installation Leadership Practices on Army Families	Assessment of the relationship between installation leadership practices, family perceptions of installation supportiveness, and family support for the Army	CFSC ARI DCSPER MACOMS	Increase knowledge of the effects of installation leadership practices; guide personnel management and decision-making	9/90
RP3	Leadership Training and Practices to Support Army Families	Design for leadership training modules on the development of a supportive installation environment for Army families, to be incorporated into the curriculum of the Command and General Staff College and other Army training; content for a "best practices" handbook for use by installation leadership throughout the Army	CFSC DCSPER TRADOC AWC MACOMS Installation Leaders	Improve training for senior leaders; improve leadership practices at the installation level	9/90
TR4	Family Adaptation to Relocation: Problems, Policies and Programs	Analysis of how different families adjust to relocations, factors which facilitate adaptation, effects of Army policies and programs, and problems experienced by Army families	CFSC ARI DCSPER	Increase knowledge of the effects of relocation; inform program management and decision-making on relocation issues	3/91
RP4	Model Relocation Policies and Programs	Recommendations for relocation policy changes and a model relocation program including a plan for test implementation and evaluation	CFSC	Improve relocation policies and programs to mitigate negative effects on families; institute new programs on a test basis	5/91

CORE EXTENSION RESEARCH
(Continued)

REFERENCE NUMBER	PRODUCT NAME	PRODUCT CONTENT	USER	USE	DATE OF DELIVERY
TR5	Family Adaptation to Separation: Stressors and Social Support	Effects of member separation on family functioning and well-being; types of families that adapt to separation; formal and informal support mechanisms used by different types of families	CFSC ARI MACOMS	Increase knowledge of separation effects; inform program management and decision-making	3/91
RPS	Strategies to Support Families during Separation	Specific strategies to mitigate the negative effects of family separations, and enhance the formal and quasi-formal support network for Army families including specific recommendations to enhance the value of Family Support Groups and other programs or policies which could be implemented on a test basis	CFSC MACOMS Install- ations	Improve policies and programs related to separations; institute new programs on a test basis	3/91

COMPLEMENTARY RESEARCH

REFERENCE NUMBER	PRODUCT NAME	PRODUCT CONTENT	USER	USE	DATE OF DELIVERY
TR16	Suggested Improvements in Army Spouse Employment Assistance Programs	Review of existing or innovative programs, and recommendation of policy options designed to improve spouse employment	CFSC MACOMs ACS DCP	Assist the Army in selecting spouse employment program or policy for trial implementation and evaluation	3/89
TR17	Evaluation of "New" Spouse Employment Assistance Program	Results of the evaluation of the selected spouse employment program	CFSC MACOMs ACS DCP	Assist the Army in deciding on wider implementation of selected program/policy	7/91
TR11	Families and Readiness: Results from Project A/AFRP Research	Relationships found between family factors, family composition changes and job performance of junior enlisted soldiers	DCSPER CFSC ASA(M&RA)	Facilitate adoption of policies and procedures that will encourage the retention of high performing soldiers with families and retard their attrition	3/90
RR2	1987 Annual Survey of Army Families: Analysis Report	Findings on Army spouses, families and services, AFAP issues and responses, relationships between spouses and the larger Army community	CFSC Installation program personnel ARI	Increase understanding of Army family issues for use in AFAP planning, and program and policy planning and implementation	4/88
RR3	TPU Attritee Research Project and (TARP) Report and Supplementary Tabulations	Information on attritees from Reserve Components, why they join and leave TPUs, their family composition, family factors, and civilian work characteristics	OCAR ARPERCEN DCSPER FORSCOM Soldier Support Center	Identify causes for and solutions to Reserve attrition	9/88

COMPLEMENTARY RESEARCH
(Continued)

<u>REFERENCE NUMBER</u>	<u>PRODUCT NAME</u>	<u>PRODUCT CONTENT</u>	<u>USER</u>	<u>USE</u>	<u>DATE OF DELIVERY</u>
RR4-RR7	Annual Integration Reports	Summaries of key findings from the research; descriptions of refined conceptual models, and implications for further research	CFSC ARI SAC WRAIR	Integrate research accomplished to date and produce blueprints for the future	89-91

CHAPTER 4: DEVELOPMENTAL RESEARCH

Developmental research is being conducted in each of the four major research areas: Family Adaptation, Family Factors and Retention, Family Factors and Readiness, and Spouse Employment. The objectives of the developmental research include:

- To develop appropriate models, hypotheses, measures, research designs, and measurement tools in each research area which will be used in the Core Research and Core Extension Projects; and
- To generate preliminary reports on some of the key relationships being studied to help meet the knowledge objectives of the overall research program.

Developmental research activities in each research area have included the following:

- Critical reviews of existing literature;
- Secondary analyses of existing survey and records data bases;
- Exploratory field investigations at selected installations, involving individual and focus group interviews, critical incident workshops, and small scale surveys;
- Consultation with research users and program and military family research experts; and
- Development of research area models, specification of hypotheses, variables and measures, and preliminary pretesting of measures.

Developmental research activities are taking place in the first two years of the research program. A discussion of the research activities, findings to date, implications for the Army Family Research Program (AFRP), additional research planned, and products is presented by research area in the sections which follow.

FAMILY ADAPTATION

Research activities during the first project year focused on the development of a conceptual model of Army family adaptation, the specification of measures for each of the conceptual domains, secondary analyses of supporting relationships, and development of research plans.

Literature Review

The literature review was designed to support the development of the conceptual framework of Army family adaptation and the identification/development of items to be included in the core survey. Military and civilian literature was reviewed for each of the following conceptual domains:

- Family characteristics;
- Family stressors;
- Coping resources, including personal and family resources, informal social supports and formal support systems;
- Coping efforts/styles;

- Family satisfaction; and
- Army/family adaptation.

The literature review focused on definition and measurement of variables in each conceptual domain. Measures for all key variables were analyzed based on prior research utilization. These measures were then field-tested with approximately 100 Army soldiers and spouses at Ft. Campbell, then revised and prepared for inclusion in the core survey.

Secondary Analyses

Secondary analyses were conducted with data from two data sets, the 1985 DoD Survey of Officer and Enlisted Personnel and Military Spouses and 1000 Army Families in Europe. The analysis of the 1985 DoD data set focused on determining the factors predictive of overall satisfaction with the military way of life for Army soldiers and spouses. Specific findings included:

1. Satisfaction with the environment for families was a significant predictor of overall satisfaction with the military way of life for the following groups of soldiers who comprise approximately 50% of the Army's total force:
 - Enlisted members married to other military members with no children;
 - Enlisted members married to other military members with children;
 - Enlisted members married to civilian spouses with children; and

- Officers married to civilian spouses with children.
2. Civilian spouse satisfaction with the service's attitude toward families and family problems is significantly and positively related to their overall satisfaction with the military way of life, most especially for civilian spouses of officers with children.

Both findings are more fully described in two working papers resulting from this analysis. Additional secondary analyses of this data are planned for Year 2 to support model development.

Secondary analysis of the 1000 Army Families in Europe data set involved an examination of the relative influence of family and Army related stressors and of individual, family and community resources on the adaptation of families recently stationed overseas. Results of the analysis generally supported the hypothesized relationships and include:

1. Family stressors were negatively related to the level of family adaptation to the Army, with some variation by respondent group.
2. Overall, the presence of adaptive resources was a better predictor of family adaptation than family stressors and, in general, the greater the adaptive resource, the greater the adaptation.
3. The most significant predictor of family adaptation for all groups was the extent to which expectations about life in Europe were met. Those families who perceived life in West Germany to be about the same or better than they expected were more adapted than those families who perceived life in West Germany to be worse than expected.

4. Perceived community support was also a significant predictor of family adaptation to Army life for all respondent groups regardless of rank or status.

These results have also been reported in a working paper submitted in Year 2.

Exploratory Field Investigations

Exploratory site visits were conducted at two TRADOC installations (Ft. Jackson and Ft. McClellan) and one FORSCOM post (Ft. Ord). Individual interviews were conducted with a total of 28 service providers from the three sites, and individual and focus group discussions were held with a total of 51 Army leaders ranging from Battalion Commanders to First Sergeants. Focus group discussions were held with 105 soldiers and spouses including 11 dual military couples and 9 single parents. The purpose of these interviews was to obtain multiple Army and family perspectives on the Army family experience, the factors which define and affect family adaptation to the Army, and the interactive effects between the Army and its families.

Results from the exploratory field investigation will be reported in a working paper to be submitted in Year 2. Preliminary findings indicate a general consensus among Army leaders and families that families do affect unit performance, both positively and negatively, and that family support contributes directly to retention. Strong families are generally perceived by unit leaders as those families who do not cause trouble or take up command time and who contribute positively to the unit. The Army clearly wants to retain families that adjust well to Army life and support

its mission. Army families, on the other hand, are most concerned about quality of life issues and those aspects of Army life that directly affect their ability to function on a day-to-day basis. These issues include:

- Quality and availability of medical and dental care;
- Quality and availability of housing;
- Quality and availability of child care;
- Problems associated with relocations, long work hours, and separations;
- Spouse employment opportunities; and
- Treatment of spouses as "second class citizens".

While Army family and community service programs were considered useful by focus group participants, they themselves relied more on their own informal support network and on civilian community resources. Further, the supportiveness of unit and post leadership to families and family problems was considered particularly important by Army families, with soldiers emphasizing unit leadership support and spouses emphasizing post leadership support.

Implications For AFRP Research

The developmental activities have resulted in a framework of Army family adaptation to be tested through the Core Research Effort. Specific measures of all key constructs have been developed, tested and revised for utilization in the core survey of soldiers and spouses.

The results of the DcD survey secondary analyses clearly support the importance of at least two Army family factors to overall satisfaction with the military way of life: (1) Army family satisfaction with the environment for families and (2) family satisfaction with the service's attitude toward families and family problems. Overall satisfaction with the military has been shown to be an important factor in retention.

Both the secondary analysis of the 1000 Army Families in Europe data and the exploratory field data reinforce the importance of focusing the AFRP research on the practical issues and unique stresses (such as relocation and separation) faced by Army families, and the resources used by families to successfully adjust to Army life. The exploratory field results suggest the utility of more in depth examinations of unit and installation leadership practices since these have been reported by soldiers and spouses as important factors affecting family adaptation.

Additional Developmental Research and Products

Additional secondary analysis of the DoD survey data will be conducted in Year 2 to support further definition of

relationships in the Family Adaptation framework. The results of these analyses, the findings from the earlier secondary analyses, and the results of the literature review will be synthesized in Technical Report 1 (TR1): "The Effect of Organizational and Family Demands on Family Adaptation in the Army: A Model and Measures." TR1 will present a multivariate model of factors which explain variation in the level of family adaptation to the combination of organizational and family demands. It will include nominal and operational definitions of each conceptual domain, hypotheses to be tested through core survey data, and measures for variables included in the model. This technical report will be developed and submitted during the second project year.

FAMILY FACTORS AND RETENTION

Historically, retention research has addressed issues such as pay, benefits, work, choice of assignments and other job and organizational issues that affect retention. Further, the focus generally has been directed toward the soldier. Developmental research activities in Year 1 were designed to identify the soldier, spouse and family factors that impact the retention decision and to generate hypotheses about how these variables interact with traditional, individual, job, compensation and Army environment factors to influence retention. Research activities included a review of the literature, secondary analysis of the 1985 DoD Survey, a limited analysis of the 1978 DoD Officer and Enlisted Survey, and exploratory focus group discussions with soldiers, spouses and administrators at two CONUS and two OCONUS locations. Findings from these Year 1 activities resulted in a refined structural

conceptualization of retention decision-making, a conceptual representation of the process features of retention decision-making and the development of items for the core instruments.

Literature Review and Secondary Analyses

Research addressing family impacts on retention is still in its infancy. Most studies have incorporated a small number of family variables and used small, restricted or non-random samples. Existing survey data have likewise addressed few family issues related to retention, making generalizations difficult. Given these limitations, the following are major findings from the literature review and secondary analyses:

1. Married soldiers, enlisted and officers, tend to have a higher intention of remaining in the Army than do single soldiers, especially males.
2. For male enlisted soldiers and officers beyond their initial service obligation, adding children to the family tends to increase retention intentions. The opposite seems to be true for female soldiers.
3. Both cognitive and effective factors enter into the process of family decision-making. A couple's early expectations about Army and family life are strong factors in the retention decision-making process.
4. Some features of job, community and military life have neutral or positive effects on some families. For other families, they are negative aspects that create stress and dissatisfaction with military life. The nature of the impact of these features on retention appears to depend on families' coping resources and their ability to adapt to the demands of daily living.

5. The probability of the spouse being unemployed has a significant negative effect on soldier retention intentions.
6. Accompanied soldiers are more likely to reenlist than those who are unaccompanied.
7. Spouse satisfaction appears to influence soldier retention intentions indirectly through soldier satisfaction.
8. Generally, the more supportive the spouse is of the soldier's remaining in the military, the more positive the soldier's reenlistment intentions and likelihood of remaining in the military. However, the conditions under which spouses influence the retention decision are not yet known.
9. Most research methodologies that address decision-making focus only on the individual as the decision maker while ignoring family dynamics and other decision situations involving two or more individuals. Further, the strength of most of these methodologies is in predicting decisions rather than in characterizing the decision process itself.

Exploratory Focus Groups

Although findings from the focus group discussions generally corroborated findings from the literature review and secondary analyses, the following highlights from these discussions provided additional clarification and suggested avenues for further research:

1. Many officers and enlisted members and spouses reported coming from families with a military tradition. Some spouses reported this family tradition and "feeling more comfortable" in a military environment as a major reason for encouraging their member spouse to remain in the military.

2. Discussions with members, spouses and couples failed to reveal clear findings and patterns with respect to retention decision-making. These discussions underscored the variety and complexity in the way individuals and couples make decisions, the factors that affect their decisions, whether and under what conditions the spouse and others influence the decision, and the timing of the decision.
3. Some enlisted soldiers reported making their decision about staying or leaving at the time of original enlistment. For others, it was a few hours before "signing the paper." Often the decision was made but then remade in the opposite direction to accommodate new circumstances (e.g., planned to get out, then married and stayed in because they had no job prospects or spouse objected to taking the risk of getting out without a job).
4. Many felt compelled to stay in upon reaching 8-10 years. They felt it was "too expensive" to sacrifice retirement and other benefits. For some couples, this was a more important issue for spouses than for members. Some members reported eroding benefits and comparable civilian benefits as reasons why they would consider leaving.
5. Officers and spouses emphasized that retention decision-making is not the issue for officers that it is for enlisted. With the current officer reduction in force, most officers are concerned with whether or not the Army will keep them rather than whether they will be able to voluntarily decide to stay or leave.

Implications For AFRP Research

Findings from these developmental research activities indicate that many family factors may affect retention, but they do little more than suggest tentative linkages among and between such factors and retention. There is still much to be learned in order to provide Army leadership with the

kind of information that will inform policy decision-making and direct resource allocation for family policy implementation and program development.

Retention research conducted to date has been devoted exclusively to the structural features of decision-making. A critical piece missing from our knowledge about family effects on retention is information about how soldiers, spouses and families make retention decisions. Research activities planned for the remainder of the project period are designed to overcome methodological shortcomings of previous studies and fill gaps in our knowledge about soldier and family retention decision-making.

Previous studies have either ignored family variables or have employed simple, two-variable correlational designs, often based on small, non-representative or restricted (e.g., officers only) samples. Generalizations across studies are difficult since key variables (job satisfaction, commitment, retention) are often defined and measured differently. Future research should build upon, and expand the boundaries of productional approaches to retention research by incorporating important family variables in a design that allows an examination of the interactions and relative impacts of these factors on retention. Additionally, the current officer reduction in force highlights the need to reexamine the definition of retention behavior for officers.

Additional Developmental Research and Products

Developmental research on family factors in the retention decision will continue in Year 2 of the project.

A major product of Year 2 will be the Family Factors and Retention Report (TR7). This report will examine the role of family, demographic, military experience, military lifestyle and economic factors in distinguishing individuals who remain in the Army and those who leave. Additionally, it will examine the relative importance of various Army family programs, policies, and practices in the retention of soldiers. The report will be based on analyses of Army records from the 1985 DoD Surveys augmented with additional data from Army administrative files, including actual retention data. Analyses will consist of multivariate modeling of retention intentions and of actual retention behavior. Information obtained from the literature review, from Year 1 focus groups, administrative interviews, and previous analyses will also be incorporated.

A major focus of Year 2 activities will be preparation for the career decision-making intensive research project. Developmental activities supporting this effort include a literature review on decision-making and family dynamics; and the conduct of focus groups and administrator and couple interviews in conjunction with the Transition Management Program currently being piloted at Ft. Bragg, North Carolina. Since TMP is designed to offer career counseling to soldiers and spouses within 270 days of ETS, this program provided a valuable opportunity to investigate retention decision-making with a population in a critical decision window. From these activities, key research questions will be developed, the existing retention decision-making process model will be refined, and methodologies will be developed, evaluated and tested. Relevant findings from these activities will be made available to the Transition Management Program. Further instrument development and pretesting is planned at additional TMP sites during Year 3.

FAMILY FACTORS AND READINESS

The overall purpose of the developmental research efforts in the readiness area is to build the tools which are needed by both researchers and Army policy-makers to relate family phenomena and Army family policies/programs to individual, spouse, and unit readiness. Given the importance of readiness as an outcome variable in the Army Family Research Program, a multi-method approach was undertaken to define and develop measures of readiness. The activities included an extensive literature review, several field research efforts, and secondary data analyses. Results are described in the sections which follow.

Literature Review

An extensive literature review was initiated to examine previous research and thought regarding the factors that have an impact on readiness at the individual soldier, spouse, and unit levels. Army experts, circulars and regulations were used to obtain information relevant to Army policies and programs.

The literature review included an overview of the conceptual framework of readiness that is guiding the initial efforts of this research area, an examination of the operational definitions of performance and readiness, a discussion of various measurement issues associated with the factors of readiness, and summaries of previous research on the role of the determinants of performance and individual and unit readiness. The specific implications of these findings for readiness measurement and the AFRP were also identified.

Individual and Unit Readiness Workshops

A series of workshops were conducted to obtain data on critical incidents and evaluate existing measures of individual and unit readiness. Workshops were conducted at Mannheim and Fulda in Germany and Ft. Campbell, KY. At each location, officers and NCOs were selected to participate from combat, combat support, and combat service support units. In each workshop, soldiers were asked to report behavioral incidents which demonstrated various levels of readiness for individual soldiers and again for units. Soldiers were also presented with a list of readiness indicators available from Army records for both individuals and units. They were then asked to rate how useful each measure would be for determining readiness. Following the completion of the workshops, the critical incidents identified were analyzed and categorized into a set of mutually exclusive and exhaustive dimensions.

The analyses yielded 15 dimensions of individual and readiness and 14 dimensions of unit readiness, as shown in Exhibit 4-1 following this page. Based on the dimensions and their definitions, a series of corresponding behaviorally anchored rating scales were developed. These scales will be evaluated and revised during the second year of the project to arrive at a shorter, empirically derived set of behavioral rating scales of individual and unit readiness for use in the AFRP core survey. The evaluations of existing Army measures of readiness were analyzed and the results will serve as a foundation for the selection of appropriate measures of readiness from Army records which will be made in Year 2.

Exhibit 4-1

PRELIMINARY READINESS DIMENSIONS

INDIVIDUAL READINESS

Cooperation/Teamwork/
Esprit de Corps

Effort and Initiative

General Soldiering Skills

Individual Deployability
(Army Task/Mission)

Individual Deployability
(Personal/Family)

Job Discipline and Integrity

Job Technical Knowledge/Skill

Performance Under Pressure
and Adverse Conditions

Personal Discipline

Physical Fitness and Health
Maintenance

INDIVIDUAL READINESS FOR
SUPERVISORY PERSONNEL

Care and Concern for
Subordinates

Care and Concern for
Subordinates' Families

Leadership

Maintenance of Training
Status of Subordinates

Maintenance of Unit
Deployability

UNIT READINESS

Adherence to Standards

Ammunition, Supplies &
Material

Care and Concern for
Families

Care and Concern for
Soldiers

Cohesion and Teamwork

Communication Within Unit

Leadership

Mission Performance

Personnel Capabilities

Personnel Deployability

Physical Fitness Program

Training Program

Unit Weapons

Vehicles/Transportation

Spouse Preparedness Exploratory Interviews

A series of interviews were conducted with spouses of officers and NCOs stationed at Ft. Ord. The semi-structured interview was designed to elicit information regarding spouse perceptions of Army concern for families, effects of deployment on the family, Army policies affecting spouse readiness, actions that spouses need to take to prepare for and cope with separations from the military member, and spouse perceptions regarding the balance between Army and family responsibilities.

Content analyses conducted on the interview responses indicated several dimensions of spouse preparedness including preparation for military member's deployment, behavioral adaptability, emotional adaptability, and physical fitness. The results were also used to develop a preliminary set of questions regarding spouse preparedness which will be administered during the spouse preparedness critical incident workshops to be conducted early in Year 2. These workshop findings will be used to construct the set of spouse preparedness questions to be administered during the core survey.

AIT Survey

To take maximal advantage of the Project A data base, the AFRP developed a family survey to be administered to AIT graduates. The primary objective of the AIT Survey is to follow samples of soldiers through their first term of enlistment to determine how family factors are related to their subsequent decision to reenlist (or not) and to individual readiness.

The AIT Survey effort differs from other family survey efforts in two respects. It is the first family survey effort that attempts to obtain longitudinal data on a sample of soldiers at the end of AIT and 18 months thereafter. The multiple time measures will allow us to obtain a better understanding of the reenlistment decision process as it occurs over time. The AIT Survey is also the only survey in the AFRP group that focuses on the first term soldier by obtaining data from soldiers completing AIT. This survey will allow us to obtain readiness data on newly trained soldiers and compare these data with readiness data obtained after the soldiers become experienced in their MOS.

The AIT Survey has been administered to approximately 10,000 trainees in 21 MOS categories during Year 1 of the project. The data have been edited and it is expected that analyses will be completed during Year 2 and the findings will be made available at that time. These results will feed into the Project A/Family Effects Complementary Research described in Chapter 7.

USAREUR Personnel Opinion Survey (UPOS)

The UPOS is an annual survey of soldiers and spouses administered to a randomly selected sample in USAREUR. During Year 1 of the project, two activities were undertaken related to the UPOS. First, a formal request was made to obtain data tapes for the 1986/1987 survey results. These results will be subjected to secondary data analyses for the purposes of developing readiness measures for administration during the AFRP core survey. Approval for use of the data was obtained and the tapes will be forwarded early in Year 2. Second, a series of questions regarding individual,

spouse, and unit readiness, and family factors likely to affect readiness were developed for inclusion in the 1987/1988 administration of the UPOS. A set of questions was adopted by UPOS survey administrators and included in the most recent administration. The data tapes for the 1987/1988 survey will also be requested when available in Year 2 for secondary analysis. Similar submissions of family questions are planned for subsequent years in an effort to develop an on-going data base regarding family factors and readiness in USAREUR.

Implications for AFRP Research

A number of implications for AFRP research have emerged from Year 1 research activities concerning readiness. First, a review of the relevant literature and revisions of the framework underscore the need to exercise care in the operational definition of variables and the development of measures. In particular, clear distinctions must be maintained between independent and dependent variables. Independent variables cannot be both predictors and components of their outcomes (i.e., job satisfaction cannot be both a predictor of readiness and a component of readiness as an outcome variable.)

Second, it appears from initial work that readiness, both at the individual and unit level, can be conceptualized as a cluster of indexes. These indexes must capture the more judgment-based aspects of readiness which can provide a qualitative complement to the more objective measures of readiness obtained from Army records. Final determination of the reliable and valid dimensions will be achieved in Year 2 after completion of further workshop data collection

and psychometric analyses of the data. Work in Year 3 should be directed at how best to combine these indexes into overall readiness measures.

Third, spouse preparedness also appears to be composed of a number of dimensions which cover the spouse's preparation for the military member's absence as well as the spouse's ability to operate within the Army context on a day to day basis. It is expected that some of the more daily aspects of spouse preparedness may be integrated with aspects of family adaptation during Year 2. Final determination of the dimensions of spouse preparedness and their measurement will be made during Year 2 following the completion of spouse preparedness critical incident workshops.

Fourth, successful administration of the AIT Survey has provided insight into the need for simplified formatting and skip patterns in the production of survey materials for the AFRP core survey. Implications for question development will be forthcoming from the analyses to be completed in Year 2. The opportunity to link measures of readiness to family factors and to performance measures in the AIT/Project A sample will greatly improve efforts during the AFRP core survey.

Finally, the inclusion of readiness related items in the UPOS-87/88 administration will provide access to a data base with which to examine the relationship of a limited number of family factors to readiness as measured within the survey. Such analyses will enable us to test preliminary hypotheses which can guide later work in the core survey. The opportunity to submit questions for future UPOS

administrations will provide the AFRP with a panel for analysis of time related issues.

Additional Developmental Research Activities and Products

To summarize, the additional developmental research activities to be conducted include:

- Evaluation, revision and reduction of the individual rating scales for measuring dimensions of individual and unit readiness based on additional critical incident workshops and psychometric analyses;
- Selection of appropriate individual and unit readiness measures to be obtained from Army records;
- Selection of spouse preparedness measures based on additional critical incident workshops with spouses;
- Analysis of AIT survey findings; and
- Secondary analysis of 1986/87 UPOS survey data.

Products will include working paper reports on AIT and UPOS survey findings.

SPOUSE EMPLOYMENT

The main focus of Year 1 developmental activities was the formulation of a conceptual framework from which to view spouse employment issues and problems and the exploration of these issues through secondary analyses and exploratory field studies. Activities and findings of Year 1

developmental research are described in the sections which follow.

Literature Review

A complete review of both the military and civilian literature on issues relevant to women's employment needs and problems was conducted. This review provided the empirical and theoretical background necessary for a comprehensive understanding of Army spouse employment. Highlights of the literature review included:

- A review of reasons women work;
- An exploration of economic factors relating to women's employment, with particular consideration given to the economic constraints experienced by Army spouses;
- The amount and types of assistance provided by male spouses to working women, particularly as this information may have implications for Army readiness and career decision-making; and
- An overview of spouse employment programs with potential applicability for Army spouses.

Some of the key findings of the literature review include:

1. There has been a great increase in the labor force participation of married women, especially mothers of young children, in recent years. There has been a similar increase among Army spouses, although the level of Army spouse employment continues to be lower than that for women married to men in the civilian labor force.

2. Over the same period, there has been an increased commitment among women to combine work and family life. Army spouses, like civilians, cite financial need, career development, and personal interest and development as reasons for working.
3. Army spouses have a set of personal and family characteristics that help define their special needs and capabilities. Most are relatively well-educated; a large proportion have young children; and -- unlike many women to whom employment programs are usually targeted -- they are in couple-headed households. Army factors also define their life situation. These factors include frequent relocations and family separations, long duty hours for soldiers, and the location of many Army installations away from labor markets with good job/career opportunities. These Army factors help account for the problems and successes of Army spouses, as well as help define the needs for programs and policies to increase opportunities for job/career success.

In addition to the literature review, experts on spouse employment programs were consulted to gain further insights into needs and program operations in the Army environment. From this composite of information, policy questions were formulated to serve as a guide for further activities.

Secondary Analyses

To explore the policy questions formulated from the literature review and expert/user consultations, secondary analyses were conducted of data contained in the 1985 DoD Surveys and the March 1985 Current Population Survey. Results of these analyses were presented in The Employment Status of Army Spouses (TR14).

Findings from the secondary analyses include:

1. Military spouses were found to be less likely to participate in the labor force and more likely to be unemployed than comparable civilian wives. The results also suggest that military wives do not earn significantly different wage rates or annual income compared to civilian wives, after controlling for other individual and household differences. Characteristics of military wives which are significantly different from those of civilian wives are seen to contribute to observed lower participation rates, higher unemployment rates, and lower earnings. In particular, geographic location, younger ages and younger children of military wives appear to be important factors of observed work outcome differentials relative to civilian wives.
2. The presence of spouse employment programs, higher levels of educational attainment, and CONUS locations were found to increase the likelihood that an Army wife will participate in the labor force. The length of time spent at the same location was also found to increase the likelihood that an Army wife will be employed.
3. The frequency of Permanent Change of Station (PCS) moves and unemployment were found to be significant and negative factors of spouses' satisfaction with the military way of life. Child care services located on post, close proximity to population centers, and soldier's income were seen to increase the spouse's satisfaction with military life.

Exploratory Field Visits

Exploratory field investigations were conducted to obtain first-hand preliminary information on the employment problems of Army spouses and on the support programs available to assist them with their employment-related needs. Sites visited included Ft. McClellan, Ft. Campbell,

Ft. Ord, and USAREUR (Mannheim and Fulda). Employed and non-employed spouses participated in exploratory discussion groups focusing on spouse employment/career issues, problems experienced and program needs. Additionally, Army program staff and leadership at each location provided information about spouse employment/career issues and programs designed to mitigate the barriers imposed for spouses by the Army lifestyle. Approximately 200 spouses and 35-40 program administrators and Army leaders have participated in these individual or group discussions.

Results of the site visits suggest that:

1. Readiness may be enhanced by a spouse's employment because (1) the soldier may be under less financial pressure to take a second job; and (2) there is less stress on the soldier because the family financial situation is better, thus leading to better performance of daily duties and while on TDY or deployment.
2. The soldier does not typically experience conflict between job performance and household responsibilities as a result of the spouse's employment because the working spouse maintains primary responsibility for the children and the household.
3. In terms of retention, spouses say the soldier's career comes first (the spouse will give up a job/career to follow him) but this can cause stress for the family and may change in the future as younger wives increasingly expect more career development.
4. Spouse employment/career opportunities are apparently less than adequate, with needs demonstrated for better information and resources as well as creative program efforts to counteract the barriers introduced by the Army lifestyle.

One purpose of the field visits was to delineate the most relevant issues to pursue in the AFRP core survey. Accordingly, the frequently expressed issues were formulated as items for questionnaire administration. Pretests of these items have been conducted at Ft. Campbell with revisions currently underway for use in future core survey pretests.

Implications for AFRP Research

Implications for further research on spouse employment indicate the need to proceed on two "tracks": (1) research designed to increase understanding of the relationship of spouse employment both to Army life conditions and key military outcomes; and (2) review and evaluation of spouse employment programs/policies.

Within these two broad areas, research is needed on several major topics. These include: (1) factors that contribute to spouse employment success; (2) Army spouse job/career patterns over the family life cycle and soldier career cycle; (3) further refinement of earnings estimates for wives; (4) the relationship of spouse job/career development and outcomes to family adaptation, readiness, and retention; and (5) employment assistance needs, programs, and program effects. These research areas will be pursued through additional secondary analyses of existing survey data, the core survey, and the spouse employment program review and evaluation.

Results of these analyses will be prepared in the form of working papers and technical reports scheduled for delivery during the third through fifth years of the

project. More detailed information on products and delivery dates is provided in the discussion of the research activities below and in Exhibit 3-8.

Additional Developmental Research and Products

Additional secondary analyses will be conducted on the characteristics of spouse employment success to determine what factors are related to the "successes" or "failures" of Army spouses in work or careers. The analysis will be based on the Labor Utilization Framework (LUF) developed by Clogg and Sullivan (1983) to define several measures of underemployment, and will extend the LUF to examine factors related to work and career success.

The variables to be investigated will include: demographic and other individual characteristics; family variables, including composition and life cycle stage; member duty requirements and career history; conditions created by the Army; and conditions in the civilian economy at the location.

Several data sets will be used for the secondary analyses. These include (1) the 1985 DoD Active-Duty Spouse Survey; (2) the March 1987 Current Population Survey; and, if possible, (3) the Annual Survey of Army Families (ASAF), a 1987 survey of spouses of active duty soldiers.

The secondary data analysis will enhance other planned AFRP research. First, the spouse employment program review in Year 2 (described in the Chapter on Complementary Research) will include interviews with spouses who have

experienced different degrees of job/career success. The interviews can examine questions identified through the secondary analyses in more depth. Second, data on factors related to spouse employment/career success will be collected in the core survey (described in Chapter 5). These new survey data will complement the results of the secondary analyses. For example, comparisons between the experiences of wives of men in the military and men in the civilian labor force can appropriately be made using data from the Current Population Survey, while the planned core survey can explore specific features of Army life experience in more depth.

The major product of the Year 2 secondary analysis, a working paper on the characteristics of spouse employment success, is scheduled for delivery early in Year 3 of the project. This working paper will present the results of the analyses of the individual, family, member career, Army, and labor market factors related to success in employment and in careers of Army spouses. It will detail the factors that differentiate between spouses who are "successful" at attaining employment and career goals and others who are less successful. These results will be useful in better understanding the employment and career development of Army spouses and the factors that contribute to their success, in identifying potentially valuable spouse employment programs for field testing, and in developing measures of desired outcomes (the spouse's success in achieving employment and career goals). The working paper on spouse employment success will be subsequently integrated with the core survey findings and included in Technical Report 15 (TR15), Characteristics of Spouse Employment Success, to be produced in Year 4.

CHAPTER 5: THE CORE RESEARCH EFFORT

The Core Research Effort has two major objectives. The first is to help meet the information objectives of the AFRP by providing data to test the primary hypotheses of the research program. As indicated in Chapters 2 and 3, the proposed research models and hypotheses require an integrated data set that includes information on the soldiers and families as well as the unit and installation/community context within which these persons work and live. This data set will then be subjected to appropriate statistical techniques to model the relationships among the variables that have been proposed, both controlling for and analyzing separately each unit of analysis whether individual, family, unit or installation. This data file will be used to test the primary hypotheses regarding linkages between family variables and soldier readiness and retention.

The second objective of the core research is to support the planned Core Extension Projects. These intensive inquiries on family processes, decision-making, and leadership practices, will rely heavily on the core sample and database for their subsequent data collection and analysis efforts.

Consequently, the Core Research Effort will require a broad, multi-source data base that provides the data required to develop the family factors models as well as to support a series of intensive and policy-rich follow-up investigations. This data base will be an extremely powerful resource for future research on the inter-relationships between Army families and the Army mission. This chapter describes the data needs and design for the Core Research Effort as they are currently conceptualized. Detailed plans will be finalized over the next year. The chapter is presented in four sections:

- Data Requirements and Instrumentation;
- Sampling;
- Data Collection;
- Analysis, Modeling, and Reports.

DATA REQUIREMENTS AND INSTRUMENTATION

The theoretical models that have been developed to guide this investigation require data to be collected at several different units of analysis. The primary unit of analysis will be the individual soldier since soldier readiness and retention behaviors serve as the two primary criterion variables in the research. Even though the proposed models suggest a variety of context and predictor variables that are likely to influence individual readiness and retention, it is the Army member who is influenced by these conditions.

A second important unit of analysis in the core research is the family. Not only is the family a primary relational context for the married and single parent soldier, but family support, adaptation, and spouse preparedness have been hypothesized to influence member retention and readiness significantly. This means that data will be needed from spouses of Army personnel to understand their roles in influencing soldier behaviors.

Previous research suggests that Army units and installations/communities also affect family and soldier attitudes and behaviors, including readiness and retention. Thus, to test our hypotheses and conduct some of the planned intensive extension projects, data from Army units, especially companies, will be needed. Army unit level data is a control

factor for individual level analyses of readiness and other outcomes; it is also a primary statistical unit for the analysis of Army unit readiness.

At a more macro level, Army installations and communities vary in their location, leadership and program resources. Therefore, the AFRP Core Research Effort also needs to incorporate data at this macro level since analyses of community level data will enhance our understanding and our ability to suggest appropriate strategies for program intervention.

Data for each of these units of analysis will be collected from multiple sources to promote overall confidence in each of their elements. For example, information on unit level phenomena will be collected from interviews with leadership, through reviews of unit records, and from soldiers who can be asked directly about their perceptions of unit readiness, morale and other issues.

Overviews of the data requirements and suggested instrumentation for each of the three levels of analysis -- installation/community, unit, and individual -- are presented in the following three sections. A summary of the required data from each level and the sources from which these data elements will be collected is presented in Exhibit 5-1.

Installation/Community Level Data

Data are needed at the installation/community level to describe the context in which soldiers and spouses live and work. Specific needs for these data include:

EXHIBIT 5-1

THE CORE RESEARCH EFFORT: DATA REQUIREMENTS, SOURCES, METHODS, AND TIME ON SITE

<u>Data Requirement</u>	<u>Anticipated Data Source</u>	<u>Collection Method</u>	<u>Time On Site</u>
Installation Level Data			
Community and installation characteristics	Secondary sources	Data abstraction	N/A
	Inventory of community services	Self-administered	N/A
	Central Army administrative records	Inventory from data file merge	N/A
Labor market and economic conditions	Secondary sources	Data abstraction	N/A
Community and family support programs inventory and quality assessment	Senior program managers	Self-administered questionnaire	45 minutes

EXHIBIT 5-1 (Continued)

<u>Data Requirement</u>	<u>Anticipated Data Source</u>	<u>Collection Method</u>	<u>Time On Site</u>
Unit Level Data			
Unit structure	Central Army administrative records	Data file merge	N/A
Unit environment	Members in core sample	Self-administered questionnaire	40 minutes
Unit leadership	Battalion officers and senior NCOs who participate in unit performance ratings	Self-administered questionnaire	15 minutes
Performance	Members in core sample	Behaviorally anchored rating scales	25 minutes
	Knowledgeable battalion officers with unit oversight	Behaviorally anchored rating scales	25 minutes
	Central Army administrative records	Data file merge	N/A
	Unit records	Data abstraction	4 hours

EXHIBIT 5-1 (Continued)

Data Requirement	Anticipated Data Source	Collection Method	Time On Site
Individual Level Data			
Attitudes, satisfactions, perceptions of Army life	Members in core sample	3 Self-administered questionnaires in group setting	2 hours
Attitudes, satisfactions, perceptions of Army life	Spouses of married soldiers in core sample	Mail questionnaire	45 minutes
Individual readiness/ performance	Supervisors of Army members in core sample	Behaviorally anchored rating scales	20 minutes
	Members in core sample	Self-administered questionnaire	15 minutes
Demographic and identification data	Central Army administrative records	Data file merge	N/A
Retention behavior	Central Army administrative records	Data file merge	N/A

- Information on the general social and structural characteristics of the installation and surrounding community;
- Labor market and economic conditions;
- Community and family support programs; and
- Attitudes and practices of installation leadership affecting Army families.

Summaries of each of these information requirements and proposed instruments for their collection are presented below.

Community and Installation Characteristics

Community context variables have been identified in previous research as relevant to our understanding of individual and family adaptation, as well as to job related attitudes and behavior. These variables include such factors as community size, geography and topography, cultural uniqueness, recreation resources, community support systems, isolation, housing adequacy, and medical facilities. Each of these factors tends to influence people's attitudes toward their community and installation and their attitudes toward their work and family environments.

The theoretical framework proposed in Chapter 2 suggests that community variables such as these serve as conditional or context variables. That is, they condition the relationships among the variables in the model by setting the context within which experiences and expectations can influence attitudes and behaviors. It is expected, therefore, that community conditions will vary and that these variations will influence the relationships among constructs in the model.

A community characteristics inventory will be prepared to collect community level data. This form will structure observations and record reviews by trained personnel on the following variables:

- Community size (population of post and local community);
- Isolation of community (proximity to urban areas);
- Culture (region of U.S., country and area, etc.);
- Political climate (support for military presence); and
- Perceived desirability of location.

In addition, we will record information on the characteristics of the installation. This information will include:

- Organization of installation;
- Number and type of units;
- Tenure of the CG, DCG, and key post staff;
- Military population assigned to MTOE units;
- Military population assigned to TDA units;
- Military trainees present (in person years);
- DA civilian employees -- Americans and foreign nationals, separately counted;
- Military dependents -- spouses and children;
- Non-command sponsored family members;

- Reservists present for annual training -- in person years; and
- Reserve centers supported by the installation.

These installation characteristics help define the level of demands on the installation for support resources. Collectively they must be used to adjust the total support available to the families of active duty members assigned to the installation and eligible for the research samples.

Labor Market and Economic Context

There are several important labor market and economic context variables which are essential to our understanding of the environment within which Army families live. These variables are particularly important for understanding the limitations on Army spouses who seek employment. Factors of interest here include the local cost-of-living, housing costs, the labor force population, the employed population, unemployment rates, and occupational mix.

Although community level labor market data are preferred, we know that data at this micro level are frequently not available, especially the unemployment rate for females. For U.S. locations, county and state level data (particularly annual employment data broken down by sex and age group) are available from existing secondary data sources and may be used as the best proxies for labor market conditions of the area surrounding the post. OCONUS, labor market opportunities will be examined both on-post and off-post, including Status of Forces Agreements which create barriers to spouse employment.

The community characteristics inventory will record at least the following variables, key to understanding labor market conditions:

- Labor force population, by sex;
- Employed population, by sex;
- Employment by 1-digit SIC sectors;
- Overall unemployment rate, by sex;
- Unemployment rate by age group, by sex; and
- Average cost of a standard unit of housing.

In addition to local economic data, the AFRP will need source information with which to estimate the potential earnings and benefits of soldiers and spouses in alternative civilian employment. This information is essential for the Perceived Equity construct in the theoretical model. Data will be used to help estimate a structural Annualized Cost of Leaving (ACOL) model, which models the retention decision by comparing current and projected household earnings if the soldier stays in the Army with estimated household earnings in similar occupations if the soldier leaves the Army. In our Developmental Research, we are examining the potential utility of the Current Population Survey (CPS) and the 1985 DoD family survey to meet these data needs. Once the best source(s) has been selected, the appropriate data files will be obtained and merged with other AFRP data so that the full family factors and retention model can be tested.

Community and Family Support Programs

Community and family support programs are especially important to the research because of their potential role in providing resources and moderating the stresses that sometimes come from relational, occupational or other contextual variables under investigation. We hypothesize that the presence and quality of these programs can influence soldier and family adaptation to the Army and therefore can improve family support for the soldier and Army. Higher quality programs are more likely to be perceived as reflective of Army leadership concerns and better able to meet needs that arise. Key programs that will be addressed in this effort include housing, child care, medical care, ACS services, youth activities, schools, and recreation activities.

The availability of programs on-and off-post will be assessed through a program inventory and quality assessment questionnaire that will be completed by senior program managers on the post and augmented by trained project personnel. The inventory will record data on program conditions and identify potential barriers that may limit participation of Army families. Questions on program quality will assess program reputation of service providers as well as their interorganizational working relationships. The purpose for this data collection is not to conduct an evaluation of the programs, but to provide basic data on program availability and quality in order to enter this information into installation level analyses.

Unit Level Data

Army units are the second major level at which information will be collected in the core field study. For purposes of this

research effort, we are most interested in company-level units. Previous research has indicated that leadership practices and behaviors at the company level (and below) can have both direct and indirect influences on family and soldier attitudes, adaptation, job satisfaction, and subsequent retention and readiness behavior.

During the field study, survey teams will collect information on the following elements:

- Unit Structure;
- Unit Environment;
- Unit Leadership; and
- Unit Performance.

A summary of the data needs and planned instrumentation for each of these categories follows.

Unit Structure

Unit structure is a contextual construct which mediates the influence of other Army and family factors on the outcome measures in the research. Structure includes such variables as unit size, location, organization, tenure, and mission as well as the frequency, duration, and recency of training exercises and other deployments. Review of existing literature has indicated that these variables help define the condition of the unit and are related to the level of readiness expected of each unit by Army standards. Characteristics of the unit can also be used in the explanation of family adaptation, individual readiness, and retention behavior.

Unit structural characteristics will be recorded on a data schedule to be completed by AFRP data collectors. The schedule will be partially completed from central Army records, with the remainder completed on site.

Unit Environment

Our literature review has revealed a number of relationships involving unit environment, family factors, and readiness. For the purposes of the present study, unit environment includes variables assessing the soldier's perception of the unit's working hours, conditions, leadership style, organizational risk taking, status (degree of visibility and respect), and degree of external support from the chain of command. Previous research has found each of these variables to contribute to satisfaction with the unit or job within a larger organization. As such, they are expected to contribute indirectly to the readiness of units studied in the AFRP.

In addition, unit environment includes family support practices within the unit. These include: perceived effort of unit and higher echelon Army leaders to communicate with and inform families about actions affecting them; perceived suitability of the unit's environment for protecting family well-being and safety; perceived concern and support for family and family time together; and the functioning of family support groups, sponsor programs, family day activities, and other resource programs. We hypothesize that these unit environment variables will exert a direct influence on family adaptation and an indirect influence on the readiness of the unit.

The variables designed to measure unit environment will be assessed primarily by means of a 40-minute survey instrument to

be completed by the unit officers and enlisted personnel in the core survey sample. A selected subset of these items will be administered to the battalion officer and senior NCOs rating each unit. A selected subset will also be included in the spouse survey.

Unit Leadership

One of the hypotheses in the readiness framework is that leadership attitudes and actions significantly affect family adaptation. In addition, leadership perceptions of family impacts on individual and unit readiness have a certain amount of face validity with other Army leaders, as direct indicators of the importance of family factors to readiness. These perceptions also serve to help interpret relationships established between family adaptation measures and individual and unit readiness. Analysis of these data, along with the unit environment data, will help provide a basis for the Unit Leadership Practices Research Project described in the following chapter.

Required data on unit leadership to be obtained from the Core Research Effort include such items as:

- Estimated percentage of time spent on family problems;
- Types of family problems requiring the most time;
- Extent of impact of family problems on specific unit performance indicators (e.g., early returns from exercises and overseas assignments, availability for deployments, time loss after relocation);
- Presence and perceptions of family support programs (e.g., sponsorship, chains of concern);
- Attitude toward family issues/concerns;

- Family-related training received; and
- Family services referral practices in responding to family problems.

A self-administered questionnaire for unit commanders, executive officers and first sergeants will be designed to obtain data for the above requirements. Completion of the questionnaire will require approximately 15 minutes. Leadership responses will be correlated with those of soldiers and spouses and will be analyzed for effects on family adaptation, perceived equity, individual readiness and retention, and unit readiness.

Unit Performance

A key requirement for assessing the relationships between family factors and unit readiness is information on unit performance. This information is most critical for units that have a mission to deploy in the field. Consequently, collection of unit readiness information will be restricted to Modified Table of Organization and Equipment (MTOE) units; unit performance information will not be obtained for Table of Distribution and Allowance (TDA) units.

Unit performance information will be obtained from two sources: (1) unit ratings by company and battalion personnel, and (2) standard unit performance data available from unit records. The data needs and instrumentation plans for each of these sources are outlined below.

Ratings by company and battalion personnel. The primary unit readiness measure used in the Core Research Effort will be derived from ratings of units made by company-level personnel and

knowledgeable battalion-level officers with unit oversight. The units will be rated on 10 to 12 readiness dimensions (to be reduced during the pretest process from a current set of 14 draft dimensions) including: adherence to standards; ammunition, supplies and materials; care and concern for families; care and concern for soldiers; cohesion and teamwork; unit communication; leadership; mission performance; personnel capabilities; personnel deployability; physical fitness program; training program; unit weapons; and vehicles/transportation. The final set of dimensions will be selected after the field test of the instruments in March/April 1988.

The ratings will be obtained from junior enlisted personnel in their first tour, NCOs, and officers within the company. The soldiers sampled within each unit will be representative of all the soldiers within that unit in terms of their platoon assignment, MOS, rank, and family status. Whether or not all scales will be completed by all sampled personnel will be decided after additional workshops and field tests of the rating scales have been completed. Supervisory officers and NCOs at the battalion level who are familiar with the performance of the selected company units will also be requested to rate the units.

The unit ratings for each readiness dimension will be made on seven-point scales with summary statements describing behaviors at the high, middle, and low points of the scales. The raters will be asked to rate first the platoon-sized units within the company with which they are sufficiently familiar. Then they will be asked to rate the company as a whole. (Both platoon and company level ratings are being obtained since some soldiers may not feel competent to rate the company as a whole. Platoon ratings will be aggregated to the company level in the analysis.)

A short 10 minute training session on how to avoid common rating errors will be given the soldiers before they make their ratings. It is anticipated that the unit ratings will take about 25 minutes to complete. A more exact estimate of rating time requirements will be available after the field test.

Unit performance records review. The readiness of units is frequently assessed by the Army itself. Existing readiness measures obtained from Army and unit records will complement the unit ratings described above. During our developmental research, Army commanders repeatedly noted that they use formal estimators, objective data, and personal evaluations and judgment in determining unit readiness. Therefore, any research effort should tap the same sources to obtain useful and realistic readiness data. Another advantage of using readiness measures obtained from Army records is that they can provide objective indexes of unit readiness. Moreover, including such indexes in our overall measures of unit readiness can add to the acceptability, reliability, and validity of these composite measures.

It is not yet clear which record data should be collected from the units in the core sample. During the initial readiness workshops, a list of 34 different kinds of records were presented to the officers and NCOs attending the workshops. They were asked to rate the relevance of the information in the records to unit readiness. Eight of the records that received high ratings are:

- Annual Command Readiness Inspection;
- Annual Command Maintenance Inspection;
- Crew Qualifications;

- Army Readiness Training and Evaluation Program (ARTEP)
- Present for Duty Strength;
- Equipment Availability Rates;
- Monthly Unit Status Report; and
- National Training Center/REFORGER/Deployment Exercises.

It is obvious that not all measures of readiness will be equally related to family issues. Duty strength, unit morale and cohesion, and personnel deployability will probably be most related to family issues. We have obtained sample copies of some of these records and are in the process of deciding which data elements could readily be extracted. During the field tests in March/April 1988, we will assess the availability of these records to assist in developing our final field procedures. Final selection of records will depend on availability, soldier evaluations of usefulness, and AFRP scientists' evaluations of the likelihood of family impact. The security classification of the unit information will also be an important consideration.

Once decisions are made about which unit records will be sought, data recording sheets will be constructed along with detailed instructions on how to extract the relevant data elements. The core survey data collectors will be trained on how to copy the requisite data onto the forms. Up to four hours per unit may be needed to complete the data recording. The time will, of course, vary with such factors as the recency, completeness, accuracy, accessibility, and types of records kept by the units.

Individual Level Data

A significant amount of information will be collected from and about individuals and families who participate in the Core Research Effort. This information will be collected from four sources:

- The Soldier Survey;
- The Spouse Survey;
- Individual Performance Ratings; and
- The Soldier Record Review.

Details of these information requirements are presented in the remainder of this section.

The four sources of individual level data will all be linked via the soldier's Social Security Number (SSN) and birthdate. This linkage will allow the survey analysis to relate spouse and couple factors to soldier outcomes. The linkage will also make it possible to relate spouse and soldier data to soldier records (e.g., retention behavior, test scores) and to obtain key soldier information that spouses may have difficulty reporting accurately (e.g., MOS, pay grade, ETS date).

Another data requirement is the matching of survey items to ones that have been used in prior military and civilian surveys. The core research team is currently reviewing items from the following surveys for comparison purposes: 1985 DoD Survey of Families, 1988 National Survey of Families and Households, 1987 Rand Survey of Army Families, 1987 Annual Survey of Army

Families, 1980-1982 Families in Blue Surveys, 1987-1988 Project A Surveys, and the 1985 Army Family Strength Survey in Europe.

Comparability with this prior research on military personnel and families will allow us to analyze trends from earlier surveys and, where data are obtained for different subpopulations than those previously studied, to extend the findings of prior research. It should also help ensure that AFRP survey results are directly comparable to those of earlier surveys whose results have wide acceptance in the military community. Comparability with major civilian surveys, where appropriate, is also important for several reasons. Direct comparisons are needed to place the Army family experience in the context of the larger American society; a number of study hypotheses imply comparisons between military and civilian families; and, in some cases, civilian figures are needed for use in models to be estimated for the research analysis (e.g., civilian earnings functions for use in ACOL models).

The Soldier Survey

The heart of the data collection effort for the Core Research Effort is the survey of Army personnel. Much of the perceptual, attitudinal, and experiential data that are hypothesized to be predictors of readiness and retention will be collected as part of the soldier survey. These will cover most of the constructs in the theoretical frameworks, to include such variables as:

- Personal and family characteristics;
- Family relationships, experiences, and expectations;
- Job attitudes and satisfaction;

- Army experiences and attitudes;
- Army life/culture satisfaction and commitment;
- Support networks and programs use and perception;
- Personal and family well-being;
- Military-civilian comparisons; and
- Career plans and decision-making.

Some of these variable categories serve primarily as contextual or control variables in the model. They are not central to the family factors hypotheses to be tested, but their measurement is necessary to determine the unique variance in retention and readiness explained by family factors under varying conditions. These categories include: individual characteristics, job satisfaction, Army culture satisfaction, and other large-scale Army organizational influences.

Based on their importance in relevant literature, the following types of individual characteristics were selected for inclusion. Among elements of background data age, sex, race, MOS, rank, family, status, etc. would be included. Among personal resources job involvement/work ethic, need for job growth, self-confidence, coping skills, emotional stability, locus of control, conformity, experience, and aptitude would be collected. While the majority of these variables will be measured by means of survey items, several will also be obtained from Army computerized files, e.g., aptitude from ASVAB scores (see the following section).

Job satisfaction is a central element in the determination of overall satisfaction with Army life and job performance. The

various components of job satisfaction include perceptions of: job security, status, stress, variety, role clarity, quality of performance feedback, autonomy/responsibility, workload, work schedule, job related separations from family, required PCS moves, family-work role conflict, and perceived support from co-workers and supervisors. Survey scales will be constructed to measure these variables, which will in turn be analyzed to construct a composite measure of job satisfaction for use in AFRP modeling efforts.

In addition to job satisfaction, Army life/culture satisfaction is an important construct for this study. At the present time, we plan to assess the following aspects of Army life/culture satisfaction: satisfaction with pay, ability to meet cost of living demands, satisfaction with Army family policies and programs, relocations, general program knowledge, overall life satisfaction, acceptance of perceived organizational values within the Army, and commitment to Army goals. Since these variables are primarily evaluative in nature, they will be measured by means of self-report survey responses.

Finally, in recognition of the need to control for potential impact of large scale environmental influences on retention and readiness behavior, survey items will be administered to assess the soldiers' perceptions of the larger military environment, including current geopolitical conditions, military funding, domestic policies on defense activities, perceived likelihood of deployment for combat, etc.

The soldier survey will be self-administered in a group setting. Currently we expect that there will be three separate survey forms. Each soldier respondent will complete a personal and work history questionnaire and a questionnaire covering

personal attitudes and experiences, Army and job attitudes and experiences, and retention orientation. Married soldiers will complete an additional questionnaire on family characteristics and issues including: family expectations, attitudes and experiences; relationships with children and spouse; perceptions of Army leadership, policies, and programs for families; perceived satisfaction, equity, and commitment; and retention decision-making. It is anticipated that these questionnaires will require an average of two hours per respondent to complete, less for single soldiers.

The survey administration will be broken down into several mini-sessions with separate questionnaire modules to be completed in each session. Several breaks will be included in the sessions and different tasks will be associated with the completion of several of the modules. Every effort will be made to make the experience interesting to the respondents.

The Spouse Survey

The AFRP spouse survey is designed to obtain data needed for:

- Developing and testing the theoretical model;
- Formulating, implementing, and assessing Army family policies and programs; and
- Identifying key subpopulations to be followed up in the project's Core Extension Projects.

The data to be collected from spouses will be similar to those to be collected from soldiers on the personal and family attitudes and experiences questionnaire. However, the spouse

questionnaire will place greater emphasis on parenthood and spouse employment issues. The following are examples of the general categories of questions that will be included in the spouse survey:

- Support program experiences and attitudes;
- Personal and family characteristics;
- Army attitudes and experiences;
- Agreement with Army values;
- Family adaptation;
- Spouse employment patterns;
- Perceptions of Army support;
- Family decision-making strategies;
- Job demands and attitudes; and
- Perceptions of military/civilian comparisons.

A questionnaire will be designed for self-administration in a mail out/mail back format. Most spouses will be able to complete the survey instrument in under 45 minutes.

Individual Performance Ratings

A number of measures of individual readiness will be obtained. These will be combined into overall composite measures reflecting the probability that the individuals will adequately perform their job duties under wartime or national emergency conditions. The composite measures will serve as dependent

variables in the family factor/individual readiness modeling effort. They will serve a similar function in the family factor/unit readiness model when aggregated across individuals sampled in the units.

Data on individual readiness will be assessed primarily by means of behavioral rating scales completed by first and second line leaders. (Peer ratings for senior NCOs may be obtained if insufficient supervisory ratings are available.) The scales include measurements of the following variables: cooperation/teamwork/esprit de corps, effort and initiative, general soldiering skills, individual deployability (Army task/mission), individual deployability (personal/family), job discipline, job technical knowledge/skills, performance under pressure and adverse conditions, personal discipline, and physical fitness and health maintenance. In addition, members with supervisory responsibilities may be rated on the following individual readiness scales: care and concern for subordinates, care and concern for subordinates' families, leadership, maintenance of training status of subordinates, and assurance of unit deployability. These scales were developed on the basis of the initial readiness workshops described in Chapter 4. Using a scale similar to that developed for ARI's Project A, a set of individual rating scales will be revised as indicated by the results of the field test in March/April 1988.

In addition, performance measures will be collected from soldier self-reports of information in their personnel folders. These elements will include such information as the number of awards and letters of commendation they have received, their most recent Skill Qualification Test (SQT) and physical fitness test scores.

The scales will be administered to soldiers and supervisors of the selected Army members within each unit. Ratings from at least two supervisors will be sought for each soldier in the sample. The scales will be constructed as seven-point behaviorally anchored ratings that can easily be completed within 20 minutes for each subject.

Soldier Record Review

The data to be collected from individual soldiers in the core member survey have three major limitations. First, the retention data will be limited to the soldiers' reports of their behavioral intentions; their reports cannot include data on their actual (subsequent) behavior. The research design thus requires gathering these longitudinal data on behavior from administrative records. Second, the survey data are subject to error; for example, past surveys of military personnel have been hampered by substantial rates of error in soldiers' self-report and self-coding of items such as military occupation, unit designation and dates of entry and rank. As a validity check on the survey data, therefore, we will need to match these responses with data from official Army sources. Third, some data elements necessary for analysis may not be known to the soldier, for instance, scores on the Armed Forces Qualifying Test (AFQT), promotion rates, and reenlistment eligibility. For all of these reasons, the survey data collection in the core project will be supplemented with data to be obtained from Army or DoD administrative data bases.

Social security number (SSN) is the key linkage to be used to identify matches between the member survey data file and the data on administrative data bases. Individual respondents will be asked to provide their SSNs as part of the core survey. These SSNs will then be used to extract records from Army and DoD data

bases, and these extracted records will then be merged with the survey responses to build an analysis file. Quarterly extracts of the personnel master files will be used to track the reenlistment dates, grade, location and other data necessary to determine if and when members have reenlisted.

This methodology has been successfully tested as part of the first year activity in the Army Family Research Program. The following files, held by DMDC and the Total Army Personnel Agency (TAPA, formerly MILPERCEN), were determined to be most likely to meet AFRP data needs:

- Active Duty Master File is a quarterly snapshot of the active force provided by the Army to DMDC each quarter by DoD regulation;
- DEERS, the Defense Enrollment Eligibility reporting System contains data on dependents;
- Reserve Components Personnel Files are monthly snapshots of personnel in the reserve components; they can be merged to identify which personnel left active duty and joined reserve or National Guard units;
- DoD Civilian employee files also provide quarterly snapshots that can be used to identify personnel who left the Army to take DoD civilian positions; and
- JUMPS (Joint Uniform Military Pay Scale) contains data on military pay.

The longitudinal structure of the DMDC files makes them easier to use than the TAPA files from which they are drawn. But the master files and accession files maintained by the TAPA are a richer source of data and may include additional variables that are deemed essential to the measurement of outcomes.

SAMPLING

The research objectives require the ability to relate characteristics and attitudes of soldiers and spouses to characteristics of the Army at both the unit and the installation level. As a consequence, the survey design must include provisions for representing Army installations, the units of the Army within those installations, and individual soldiers within those units (as well as soldier's spouses if soldiers are married). To support these research objectives, the probability samples of persons and units must be capable of producing unbiased estimates of soldier characteristics, characteristics of soldiers' spouses and families, characteristics of Army units, and characteristics of installations.

Definition of the Population

The survey population is comprised of persons eligible to enter into the survey sample. For this Army Family Research Program, the population is defined as:

- All active duty Army enlisted personnel at pay grade levels E2 through E8 who have been assigned to a permanent duty station excluding all persons assigned to classified units;
- All active duty Army officers below the rank of general, who have been assigned to a permanent duty station excluding all officers assigned to classified units; and
- All spouses of the above defined military personnel, regardless of their location.

Sample Selection Procedures

To be considered valid in a statistical sense, any inferences drawn from a sample must be supported by the probability structure that gives rise to the observations in hand. The underlying probability structure provides the required link between the sample and the survey population. The specification of the probability structure is conveniently referred to as the sample design.

The sample design for the Core Research Effort can be summarized as a stratified, three-stage, cluster design. Relevant statistical principles have been used to develop a demonstrably unbiased design. The requirements for an unbiased design are that:

- Every member of the survey population be assigned a non-zero probability of selection into the sample; and
- The randomization procedure used to select the sample generate, in expectation, the assigned probabilities for each member of the survey population.

Given these requirements, specific design issues then center on assigning the probabilities in such a manner as to obtain acceptable levels of precision for acceptable levels of cost.

However, there are even more critical factors in determining total sample size: (1) the identification of critical subpopulations (or reporting domains) for which estimates are desired, (2) the level of precision desired for these subpopulation estimates, and (3) the degree of oversampling required to obtain a sufficient number of sample respondents in relatively rare subpopulations.

As shown in greater detail in the Appendix, we will require an initial sample of approximately 1,250 soldiers for each subpopulation group for which we will be developing separate regression models. These estimates are based on the assumption of self-weighting samples at the third stage in our design. As we are forced to higher oversampling rates for certain subpopulations (e.g., female officers), our initial sample size requirements increase. The deleterious effects of these factors can be addressed by either increasing the total sample size or accepting lower precision levels for selected subpopulation groups.

Final decisions for both total sample size and allocation will be made after we analyze the distribution of Army members across pay grade, sex, and marital status. This information has been requested from TAPA and will be available at the time we select the first and second stage sample.

The sample will be selected from the survey population in three stages. The first level of selection will be comprised of geographically proximate sites (usually installations), each of which can be partitioned into second stage units consisting of deployable/functional organizational units containing a minimum number of soldiers. A probability sample of 40 first stage sampling units (FSUs) will be selected. Within those 40 FSUs, a probability sample of 480 second stage units (SSUs) will be chosen. Finally, in the third stage of sample selection, an initial random sample of approximately 20,000 soldiers will be selected from the selected SSUs. The sample design, summarized in Exhibit 5-2, is described in detail below.

EXHIBIT 5-2

OVERVIEW OF ARMY FAMILY RESEARCH PROGRAM CORE RESEARCH SAMPLE DESIGN

First Stage

Sampling Units:	Posts/installations/sites
Stratification:	Major command: FORSCOM TRADOC USAREUR KOREA/WESTCOM Others
Allocation to Strata:	Proportional to number of eligible persons
Type of Selection:	PPS to number of eligible persons
Sample Size:	40

Second Stage

Sampling Units:	Army organizational units (UICs)
Stratification:	Unit function: MTOE TDA
Allocation to Strata:	Oversample MTOE units
Type of Selection:	PPS to composite number of officers/enlisted and males/females
Sample Size:	480

Third Stage

Sampling Units:	Soldiers and spouses of soldiers
Stratification:	Paygrade group Sex Marital Status
Allocation to Strata:	Oversample officers, couples, and females
Type of Selection:	Random sample within UIC
Sample Size:	4,000 single soldiers 16,000 married soldiers 16,000 spouses

Stratification and Selection of First Stage Units

The first stage sampling units (FSUs) will be defined as (a) single geographic sites where Army unit personnel are located, or (b) a combination of geographic sites. Sites containing small numbers of soldiers (e.g., recruiting stations) will be associated with the FSU that includes the nearest installation, providing they are within reasonable access (e.g., one hour's driving time) to Army support services. Otherwise, remote, geographically proximate sites will be aggregated until an FSU contains at least six SSUs. A minimum-size requirement of six SSUs per FSU is proposed to place a limit on the geographic displacement of an FSU. In the event an FSU with fewer than twelve SSUs is selected, the allocation of SSUs to other FSUs will be increased to insure a sample size of 480 SSUs.

FSUs will be assigned to the following strata that are defined by major command: FORSCOM, TRADOC, USAREUR, Korea/WESTCOM, and all others. A proportional allocation of FSUs to these strata (with the provision that, for variance estimation, at least two FSUs be selected from each stratum) guarantees not only command representation, but also geographic dispersion. Within these strata, the selection of sample FSUs will be made with probabilities that are proportional to the number of soldiers in the FSU.

Stratification and Selection of Second Stage Sampling Units

Second stage sampling units (SSUs) will be defined, to the extent possible, in terms of Army organizational units, e.g., as per the Modified Table of Organization and Equipment (TOE). For the Army, a "unit" is not simply an aggregation of persons but is a discrete functioning entity. These "units" will be identified

by their UIC (Unit Identification Code) and generally will correspond to companies. In general, use of this identification framework will enable us to associate specific mission, commander, subunits, etc., with our SSUs. In situations where the Army organizational unit is unusual or modified (e.g., recruiting stations, training/instructional cadres, the Pentagon, etc.), pseudo-company SSUs will be defined on the basis of functional or deployment criteria meaningful to the Army (e.g., as per the Table of Distribution and Allowances (TDA)). This definition of SSUs is required, both substantively and analytically, to investigate the issue of "unit" readiness.

SSUs will be stratified by unit mission or function. Stratification of units by MTOE or TDA will serve to assure representation of certain types of units that are critical to the analytical requirements of the field study. For example, MTOE units may be over-represented to insure a sufficient unit-level sample size for the readiness research area. Certain kinds of units which are rare Army-wide (e.g., Army-level headquarters) will be represented only if the FSUs they belong to are selected by chance. Even if stratification at the SSU level makes selection of such a unit certain, it may not be possible to contend that all such units throughout the Army have been statistically represented.

Stratification and Selection of Third Stage Units

An average of 42 soldiers will be randomly selected for inclusion in the survey from each of the 480 selected SSUs, yielding a total sample of approximately 20,000 soldiers. In addition, the spouse of every soldier selected into the sample will be included. Thus, the probability of selection of the

spouse will be identical to that of the soldier to whom the spouse is linked.

Military personnel will be stratified by sex, marital status, and paygrade group (i.e., E2-E4, E5-E8, W1-W4, 01-03, and 04-06). In order to avoid the deleterious effects of unequal weighting, persons within each of these strata will be assigned the same overall selection probability whenever possible. Details of these procedures will be developed as sample design activities continue. Every effort will be made to have the personnel within SSU third stage samples representative of the SSU populations from which they were drawn. This will allow unit level scores to be obtained from the personnel within SSU samples without weighting.

The final third stage sample size of 16,000 married and 4,000 single soldiers is more than adequate to develop Army-wide estimates at appropriate precision levels. Very few of these 20,000 soldiers will become non-respondents. Soldiers will be tasked to complete the survey in a group setting. Therefore, soldier response rates should be equal to or greater than 95%.

It should be emphasized that personnel performance raters who provide data on sample members may or may not be sample members themselves. Stratification by pay grade groupings will result in the oversampling of senior NCOs and officers by design. Many, if not most, raters will be selected into the sample by chance. However automatic inclusion of raters will be avoided in order to maintain the unbiased property of the estimates. Additional details of the sample design for this study are provided in the Appendix.

DATA COLLECTION

As described above, forty Army installations, world-wide, will be sampled. Within each installation, a probability sample averaging 12 units will be chosen for a total of 480 units. Within each unit, an average of 42 soldiers will be selected for an approximate total of 20,000 soldiers in the sample.

As indicated in the introductory sections of this chapter, several different types of data collection methods will be implemented at each installation. Survey teams will visit each sampled installation for approximately two weeks, working with an installation appointed point of contact (POC). The Army POC will help to: arrange locations for the group administrations of the member questionnaire; assure attendance of sampled members at scheduled survey administrations; guide the survey team through the proper protocol for gaining access to the requested records; schedule appointments with installation leadership; obtain rating information; and identify a location where materials can be held temporarily in a secure area.

The survey teams on site will assure the identification of individuals selected for the sample, the proper distribution and completion of the questionnaires, and the completeness of records abstraction. In addition the team will assure the confidentiality of all data collected by maintaining a complete chain of custody of completed records until they are mailed to RTI or an RTI designated subcontractor.

A field study as complex as that anticipated for this effort can only be implemented after a thorough and extensive planning effort. The next section summarizes our current plans for these preparatory activities. Following this summary, a description is

presented of our current plans for actual data collection and abstraction.

Preparatory Activities

Two types of preparatory activities will be conducted: pretesting and field testing. Pretests will be used to clarify constructs, scales and items for the development of questionnaires. Field tests will be used to test the developed instruments and the complete complement of data collection procedures. Pretests will be conducted in the first half of Year 2, and field testing will occur in the last half of Year 2 and early in Year 3.

Pretest instruments will be in a mock format. Groups of enlisted personnel, officers and spouses will be administered instruments in group settings. Each pretesting session will last two to four hours and will be attended by 12-15 participants.

Participants will first complete a set of questionnaires. After the completion of this exercise, group discussions will be conducted to evaluate the instruments with regard to comprehensiveness, appropriateness, ease of use, reliability and validity of the items and scales used in the instruments. These sessions will be conducted by project analysts who are familiar with both substantive issues and instrument design.

The completed questionnaires will be processed to provide analysts with the empirical base for determining appropriate revisions in wording, skip pattern routings, instructions and survey protocol. Other content specific additions or deletions may be also determined in this process.

Based on the findings of the pretests, project staff will revise instruments, develop data requests to obtain missing data from records, and prepare field procedures. Field testing of questionnaire administration will then be conducted.

Additional field test activities will include obtaining rating information from sample members' supervisors, as well as records data necessary for both individual and unit readiness assessment. Particular attention will be devoted to adapting basic procedures for efficient administration in a variety of MACOM operational environments.

Data Collection Plans

Prior to collecting data on an installation, all available records data for the installation and the most geographically proximate community will be acquired from sources mentioned in preceding sections. Any gaps in data will thus be determined. Missing records data will be obtained from knowledgeable sources by the data collection team during either their briefing visit and/or during the data collection period on an installation.

Troop requests will be submitted that identify sample members and the time required of the sampled troops to obtain the required data. Approximately 30-60 days prior to scheduled data collection, a formal in-briefing will be conducted, a point of contact (POC) or installation liaison officer (ILO) will be identified, and arrangements for locations and times for group administrations will be determined. These briefings will occur during the end of the second year and early in the third year of the project.

The current availability of sample members, supervisors and other desired respondents (i.e., service providers, the CG, DCG, key installation staff, battalion commanding officers, battalion executive officers and battalion command sergeant majors) will be determined through contact with the POC. Based on this information, survey packets will be prepared for each respondent, packaged and shipped to the POC. These materials will be held by the POC in a secure space through the data collection period after which time they will be packaged and returned by the survey team leader for processing.

A three or four-person data collection team will conduct the survey at each installation for a period of approximately two weeks. During this time period, the team will conduct appropriate briefings and collect all required data. Details of field schedules will be developed after the conclusion of all field tests.

Unlike soldiers, eligible spouses cannot be tasked to attend survey administration sessions. We anticipate, therefore, that it will be necessary to use a self-administered, mail-out/mail-back type of instrument to obtain information.

Final procedures will be developed to obtain spouse identification and addresses in order to develop the survey list. Soldiers will be asked to fill out a mailing label. This address information can then be used to send the questionnaire to the spouse. This and other procedures will be reviewed on the basis of field test data and examination of the experience of prior military spouse surveys.

The initial mailing to the spouse should include a cover letter explaining the purpose of the survey, the importance of

spouse responses, and the eventual use of the information from the survey. This letter should be written on official letterhead stationery, and should be signed by someone whose name and position are respected by the spouse. To achieve an acceptable response rate, at least two mail follow-ups will be made. Subsequently, if resources allow, a telephone follow-up can be used for those who have not responded within four to six weeks after the mail out.

In addition, to assess the effects of nonresponse on the survey analyses, we anticipate an intensive telephone follow-up with a subsample of nonrespondents. These spouses who did not respond to the survey can be asked a limited number of questions from the instrument by phone. The results can be used to estimate the effect of nonresponse on the spouse survey findings.

Finally, procedures to request records information from central administrative files will be developed. These procedures will be reviewed with appropriate TAPA and DMDC officials to identify and select the most effective and efficient processes for obtaining the requisite administrative information that will be merged with data from the survey files.

ANALYSIS AND MODELING

The AFRP theoretical frameworks were described in Chapter 2; the Core Research Effort earlier in this chapter. Several features of the framework and design have important implications for the analysis and modeling of the core data. In this section we briefly review the conceptual and design considerations that affect the analysis approach and outline the tasks that will be undertaken to carry out the analysis and modeling activity.

Conceptual and Design Elements

Several features of the theoretical models and research design have important implications for the analysis and modeling.

Theoretical Model and Level of Analysis

The overall theoretical model for the project is a causal model linking exogenous factors, individual and family expectations and experiences, adaptation, perceptions of relative equity in the Army and civilian environments, and other factors to each other and to the outcomes of retention and readiness. A major component of the AFRP modeling treats family decision-making at the level of the individual soldier, with spouse factors operating through their effects on soldier's performance, perceptions, and decisions. At the same time, the model is also conceptualized with the Army unit as the level of analysis, especially for analyses of readiness. Thus, it will be necessary to model outcomes at both the individual and at aggregate levels.

The ACOL (Annualized Cost of Leaving) model is an integral part of this AFRP theoretical framework which will be estimated separately. Its underlying utility maximizing hypothesis, which compares the costs and benefits of staying in the Army with leaving it, is conceptually consistent with the overall AFRP model.

Functional Forms of Relationships and Feedback

The theoretical model includes relationships that can and those that cannot, appropriately be treated as simple linear ones. These include both conditional relationships (or interactions), and ones in which relationships may be curvilinear (e.g., there may be an optimal level of family commitment from the point of view of soldier job performance). Feedback is also present in the theoretical model (e.g., readiness or retention outcomes may result in change in Army family policies or practices). This requires a flexible modeling strategy and the careful specification of hypothesized relationships in the model. Non-linear effects of independent variables can be treated through such approaches as inclusion of sets of dummy variables for levels of key factors or the use of quadratic terms. Interactions can be treated by the inclusion of interaction terms, for either continuous or dummy variables, depending on the model specification. Nonlinearity in outcome variables can be treated using binomial or multinomial logit or probit models. In segments of the model where it is appropriate, two stage least squares regression can be used to model feedback.

Measurement Issues

The model includes a set of major constructs which, in the actual data collection, will be operationalized in the form of a number of separate variables and items. In some cases, existing scales, with known reliability and validity, can be employed. In others, new instrumentation will be developed and tested and measures constructed. Principal components and other techniques can be used to construct measures needed for the model estimation. This will be an important part of both the pretest and final analysis phase.

Overall AFRP Model and Sub-Models

The AFRP theoretical framework is designed to serve both as a heuristic and as a model that can be estimated, in whole or in segments. It is also linked to the more detailed submodels of family adaptation, retention, readiness and spouse employment. Statistically, it is necessary to estimate the submodels and to integrate them (conceptually and analytically) with one another and with the overall model. This requires consistency in the modeling strategies and analytic approaches employed, as well as close coordination in the operationalization and estimation of the submodels. This coordination of the individual submodels will be an important part of the responsibility of the Core Research Planning Group throughout the period of field study planning, implementation, and analysis.

Research Design Features

The Core Research Effort uses a cross-sectional data collection strategy that includes a complex sample design, concurrently collecting data at the community, unit, and individual level. Moreover, the design calls for the collection of data from both spouses of married couples, thus allowing analyses at the couple and individual levels (e.g., the effect of spouse and soldier attitudes on soldier behavior; or spouse and soldiers factors related to couple agreement or disagreement on family and work values).

Also, it is expected that three kinds of longitudinal data will be collected. First, some retrospective history is planned for individuals and families through the soldier and spouse surveys. Second, the Core Extension Research will follow up some individuals, units, and installations selected from the original

core sample. In this case, the cross-sectional core data are used to screen for cases in key research categories and provide the baseline measures for the Core Extension Research Projects. Finally, prospective data will be obtained from administrative records for individuals in order to analyze subsequent military career outcomes (e.g., promotions, retention, eligibility and actual retention).

These design features dictate several requirements for the analysis approach:

- Statistical techniques that appropriately take design effects into account need to be used for hypothesis testing and model estimation;
- The analyses need to utilize data collected at different levels, using both measures obtained directly (e.g., installation location), and ones constructed from individual level data and aggregated (e.g., mean unit performance, degree of couple agreement on family life values);
- Data need to be analyzed and used to select cases for the Core Extension Research Projects (e.g., units high or low on readiness and family support); and
- Both cross-sectional and longitudinal data analysis techniques will be required.

Statistical Analysis Approaches to Model Estimation

A number of statistical modeling techniques are available that meet the analytical needs for core data analysis and modeling. These include the following:

Regression models of individual level outcomes. Depending on the nature of the conceptual models being estimated and the

outcome measures, appropriate techniques include ordinary least squares regression, two-and three-stage least squares, and, for categorical outcomes, binomial or multinomial logit or probit models. LISREL models incorporate both psychometric measurement models (for the treatment of items representing constructs or latent variables) and structural equation models for the estimation of the causal models. As discussed above, any of these techniques can incorporate interactions among independent variables and non-linear effects, through the representation of the independent variables (e.g., by sets of dummy variables, non-linear terms, and interaction terms). Moreover, both individual and higher level (e.g., unit, community) variables can be included in the set of independent variables in the model.

Models of outcomes at the unit or other supra-individual level. Essentially the same modeling techniques used for individual level model estimation can also be applied in analyses at the unit level for the analysis of unit readiness. Both continuous and categorical outcomes can be modeled at this level. Some independent variables will need to be constructed by aggregating individual data, while others will have been obtained initially at the appropriate level (e.g., descriptive characteristics of the unit).

Longitudinal models. Histories of prior events and subsequent outcomes (e.g., retention behavior) can be modeled using appropriate longitudinal analysis techniques. In cases where partial histories with right-censoring of events are obtained, life tables and related modeling techniques are appropriate. Hazards models provide a means of multivariate modeling of life table outcomes. This technique makes it possible to include both independent variables that are invariant over time (e.g., race, sex) and ones that are time-dependent

(e.g., marital status, pay grade). In addition to hazards models, event history models can also be used to analyze life history data. For other purposes, such as the analysis of subsequent retention behavior over a fixed time period, if no right-censoring of the data is involved, logistic regression or other standard techniques can be used to analyze longitudinal data. In some other cases, repeated measures will be obtained for the same cases (individuals or units) at more than one time point. These data can be analyzed with modeling approaches that take into account the use of repeated measures.

Stages of Work for Analysis and Modeling

The specific tasks for the analyses will be specified during the core research planning stage. These include:

- Data receipt and data entry;
- Data editing and imputation;
- Construction and inclusion of weights;
- Analysis of items and constructs, with scale and variable creation;
- Data file merging for individual level files (merging higher-order data onto the individual file, and merging soldier and spouse data);
- Construction of unit-level files for analyses (including aggregation of individual data and subsequent merging);
- Preliminary descriptive analyses, at individual and unit levels, to provide early results to users and give direction to model development;

- Screening and selection of cases for Core Extension Research Projects;
- Collection and merging of later data (e.g., retention behavior, change in family status);
- Estimation of submodels, interpretation of results, and review of implications for other submodels and overall model; and
- Development and estimation of overall model, interpretation of model findings, and integration of results.

Reports

Five Technical Reports will be developed from information collected during the Core Research Effort.

- TR2: The Effect of Organizational and Family Demands on Family Adaptation in the Army: Primary Research Findings
- TR6: Operational Measures for Army Family Adaptation
- TR9: Relative Importance of Army Family Programs, Policies, and Practices in the Retention of Soldiers
- TR12: Relative Importance of Army Family Programs, Policies and Practices on Individual and Unit Readiness
- TR15: Characteristics of Spouse Employment Success.

Descriptions of these reports were provided in Exhibit 3-8.

CHAPTER 6: CORE EXTENSION RESEARCH

As indicated in Chapter 3, the Core Extension Research Projects are designed to provide more qualitative, frequently longitudinal investigations of targeted subsamples of soldiers, families, units and installations selected from the core sample. These projects will provide the knowledge base for the development of program and policy options for immediate use by Army leadership:

- The Career Decision-making Project will lead to the design of career counseling strategies targeted toward family members and issues;
- The Unit Leadership Practices and Readiness Project will lead to the development, evaluation and production of manuals and potential programs of instruction for NCOs and officers in unit leadership roles;
- The Installation Leadership Practices Project will lead to the design of a handbook and leadership training modules on creating supportive environments for Army families;
- The Family Adaptation to Relocation Project will result in recommendations for model policies and programs to reduce family stress and loss of soldier productivity associated with family relocation; and
- The Family Adaptation to Separations Project will provide policy recommendations regarding the support of families during separations, and models for family support groups.

The Core Extension Research Projects are discussed in detail on the following pages.

CAREER DECISION-MAKING

Estimating the relationship between family factors and retention is one of the key goals of the Army Family Research Program. This estimation will take several forms. While the retention research described in the core effort will test cross-sectional relationships predicting retention intentions and behavior, the retention decision-making extension project will focus on the process by which individuals and families actually make retention decisions. Deciding whether to stay in or leave the Army is a process which unfolds over time as members and spouses, individually and as a couple, collect and evaluate information, impressions and preferences concerning their future lifestyle and career development.

Retention decision-making has two major features which cannot be captured in the core effort. First, the retention decision-making process contains a longitudinal element which cannot be captured easily and reliably in a single data collection. Second, the Army needs to plan interventions to influence the retention decision-making process of the soldiers and families that the Army wishes to retain. To supply the Army with detailed recommendations on interventions, the AFRP needs to identify and describe the mechanisms by which family power and influence operate in retention decision-making. The level of detail and the types of information needed to understand these processes cannot be addressed adequately by the Core Research Effort.

Consequently this Core Extension Project will focus on the construction of a decision-making model that describes the ways in which Army families make retention decisions.

The findings will suggest strategies for the Army's use in the design of policies, programs and interventions to successfully retain high performing soldiers.

Six decision-making process questions were developed to guide this research effort. The questions were based on a review of the literature on the effects of family factors on retention (Etheridge, 1988) and a preliminary review of the literature on decision-making (Zirk, McTeigue, Wilson, Adelman & Pliske, 1987) and family power and influence. The six questions are:

- What is the nature and extent of family member participation in and influence on the retention decision?
- What are the processes involved in family member influence?
- What information is used by members and spouses in the retention decision?
- What are the sources of the information, and patterns of information combinations which families use to reach a decision?
- What is the nature and extent of influence on the family decision process by persons and institutions outside the family?
- Over what period of time does the process occur?

These questions will be further developed and refined during Year 2, drawing on information supplied by Year 1 activities -- literature review, focus groups and couple interview data. Findings from these three sources will also contribute to the refinement of the decision-making process model.

Data Requirements

Since participants in this effort will be a subsample selected from the core research population, certain screening information will be required in the core survey. From administrative records from the core survey, data such as rank, pay grade, ETS date, marital status, number of children and various other individual and family demographics will be gathered. Additional sampling factors available from the core questionnaire include "decision-making orientation" measures such as sex role traditionalism and decision-making styles.

Data for the project itself will then be collected from interviews with a subsample of families drawn from participants in our core effort. A complete set of information needs must await further Year 2 planning and design. However, at a minimum, detailed information will be needed about decision-making strategies and styles, information sources and resources used by families, family member power and influence, decision roles, member and spouse attitudes, normative attachments, and soldier, spouse and family values, goals and plans. Although this inquiry will not focus on how soldiers and families make all household and family decisions, it will be important to determine whether the retention decision process varies appreciably from the decision-making patterns typically used by the family. Data will be sought on the range and types of factors that may influence the retention decision, including: individual and family factors; community factors; spouse and member job factors; and spouse and member satisfaction with and preference for various civilian lifestyles versus an Army way of life. In addition to the

need for in-depth information about the nature and extent of family member participation/influence in the stay/leave decision, this investigation will need to focus particularly on the process by which participation and influence operates.

Methodology

Instrumentation

Some combination of interview guides, questionnaires and group and/or individually administered psychometric scales will be necessary for measuring the five factors of interest to retention decision-making among Army families:

- The factors that influence the retention decision;
- The relative importance of these factors;
- Decision strategies;
- Spouse and member power and influence in the decision-making process; and
- Variations in the nature, influences and stability of the decision over time.

Utility measurement techniques (Rakoff, Adelman, & Mandel, 1987) will be considered as a mechanism for weighting the importance of factors in the retention decision. Techniques for addressing the remaining elements of the decision-making process will be developed or modified from existing approaches during Year 2.

Sampling

Because of the complexity of the family decision-making process, and the extensive nature of the data required, a limited sample of approximately 400 families of enlisted soldiers will be selected. These families, at a maximum of 10 locations, will be selected from the participants in the Core Research Effort. A set of possible sampling considerations follows. Final selection will be made after consultation with key Department of the Army staff:

- Soldiers must be currently married.
- Soldiers must be within a specified window of time before a reenlistment decision.
- Soldiers working in key or critical shortage MOS may be deliberately selected.
- Subgroups of families will be chosen to maximize the variance among families at decision points of particular interest to the Army, such as first and second term enlisted, and personnel eligible for voluntary retirement.
- Subgroups will be selected at various stages of the family life cycle -- i.e., families with no children, families with young children, families with teenage children.
- Dual career soldiers, single parent soldiers, and soldiers meeting specific quality performance criteria of interest to the Army will be three other subgroups considered for selection.

Final sampling decisions will be made later in Year 2 when the decision-making conceptual model is further refined and the sampling frame for the core effort is specified.

Data Collection

Data collection will begin during the last quarter of Year 3 and continue into Year 4. Since evidence from developmental research suggests that the retention decision evolves over time, the project will be longitudinal, permitting the tracking of changing dynamics. Measurements are tentatively planned at three points for all participants based on their distance from ETS. These consecutive measures will provide insight into both development of the process and into the stability of the decision over time. At each of the data collection points, we expect to use a combination of formal questionnaire items and personal interview techniques to have the couple (both together and separately) describe the process they are undergoing. We will investigate additional data collection techniques which may address the decision-making issues of interest.

Analysis

Because analysis/modeling strategies are, in part, a function of data collection strategies, they will be developed in conjunction with testing of methodologies in Year 2. A variety of multivariate analysis techniques will be required to deal with the rich data set that the project will yield. In addition to statistical analysis, the extensive personal interviews will yield rich qualitative data amenable to contextual and descriptive analyses.

Outcomes and Products

The primary products from this effort will be:

- A Technical Report, Career Decision-Making Factors and Process, describing the decision-making model and findings, with a discussion of implications for the types of Army family programs, policies and strategies needed to enhance retention; and
- A Research Product, Strategies to Enhance Retention of Quality Soldiers, containing descriptions of family-oriented interventions that can be pursued by the Army in structuring programs and policies to increase retention of quality soldiers.

Both products will be completed in Year 5.

The Technical Report will provide a comprehensive, in-depth understanding of: the nature and extent of family member participation and influence in the stay/leave decision; the processes by which family member influence operates; the decision strategies used; the information and considerations entering into the decision; the sources of the information; the way the considerations are combined to reach a decision; the nature and extent of influence on the family decision process by persons and institutions outside the family; the relative stability of the decision over time; the variability in the process by family and career cycle stage; and the influence of current and potential Army policies, programs, and procedures.

While final identification of the relevant programs, policies, and strategies to be contained in the Research Product must await results of this effort, some

possibilities for interventions that may be recommended include:

- Job enrichment training modules and aids (manual, videotape demonstrations) for reenlistment NCOs (to be called TACCs, or Total Army Career Counselors, by 1990);
- Reenlistment decision aids for use with Army members and their spouses by reenlistment NCOs; and
- Training modules to increase the effectiveness of key supervisory personnel (commanding and noncommissioned officers) in retaining high performing soldiers through the incorporation of family factors.

UNIT LEADERSHIP PRACTICES/READINESS

The goal of this intensive investigation is to provide the information and prepare and test the materials to develop Army leadership guidelines and materials for enhancing individual, spouse, and unit readiness through procedures and actions taken at the unit level. The focus of this investigation will be on practices that have impacts on Army families.

The developmental research described in Chapter 4 has shown that a vital connection between family factors and readiness occurs at the unit (company) level. In the readiness workshop focus groups of Year 1, Army families explained that the officers and NCOs in charge of the unit, through their personnel practices and leadership styles, probably have the most impact on family well-being. As a result, policies promoting family well-being could realize considerable savings in unit command time now spent dealing with family problems.

The core survey will, in part, be designed to illuminate these connections between family factors and individual and unit readiness. Although extremely important, the identification of family factor/readiness linkages is only the first step. Equally, if not more important, is the determination of how unit leadership could modify its family/readiness related behavior to effect positive gains in both readiness and family well-being. Core survey respondents will be questioned about specific family related practices of unit leadership.

A five-phased approach is planned for the development of unit leadership guidelines and materials. In Phase 1, family factors and readiness relationships will be examined within the framework of the core analytic and modeling effort. Analyses will emphasize identifying unit leadership practices that impact family adaptation and readiness.

In Phase 2, case studies will be conducted of units that measured high in both readiness and family adaptation and those that were low on both key measures in the core survey. The case studies will attempt to determine in more depth, the leadership practices that differentiate the high from the low performing units. Here we will be attempting to identify the decisions and actions of the unit leaders which alter family routines and plans, affect soldiers' presence/absence from home, and impact on family attitudes toward the Army and retention and readiness-related behavior.

In Phase 3, the lessons learned from the first two phases will be incorporated into manuals and/or other expository materials that can be used to inform unit leaders on how they can improve their units' and soldiers' readiness and the well-being of the families in their units.

In Phase 4, these materials will be tried out in a small scale demonstration. Units that were identified in the core survey as having low readiness and family well-being will be given short informative sessions highlighting the findings to date, with emphasis on the procedures found to be effective in other units. A small control group of similarly identified units will not be given the leadership materials. For both groups of units, before and after

measurements of a limited number of key variables will be obtained six months apart. In Phase 5, the last phase, data from Phase 4 will be analyzed and the results of the case studies and demonstrations written up in a technical report (TR13). Any indicated modifications of the leadership materials will also be made before placing them in an associated research product.

Data Requirements

Initial analyses of the core survey data will allow early determination of Modified Table of Organization and Equipment (MTOE) units in each installation that measured high in both readiness and family adaptation and units that were low in both these areas. Our intent will be to select units that are high or low relative to other units within their respective installations and which together constitute a fairly representative sample of units across installations.

Further analyses of the core member, family, and leadership surveys will allow identification of factors and practices at the unit level which impact family adaptation. The researchers in their case study interviews of unit personnel and their spouses will seek a more thorough understanding of how these unit factors interact and work to help produce high and low readiness and family adaptation.

Although more than one year will have passed since the core survey data collection, the unit readiness and family adaptation data from the core will again be used in the selection of the units comprising the treatment and control groups in the Phase 4 demonstration. These data will be

used to form matched pairs of units, with one unit receiving the leadership materials and the other functioning as a control.

Methodology

Instrumentation

Drawing the case study and demonstration units from the large sample that participated in the core survey allows the statistical examination of the amount and direction of change in key dependent variables during the interim. We will, therefore, re-administer some of the survey instruments to unit personnel and their spouses at the beginning of the case study and demonstration. In the case studies, we will be particularly interested in determining the factors underlying any significant shifts in readiness or family adaptation levels. Examination of these changes will be facilitated by visiting these units at approximately the same points in their annual training cycles as the earlier core survey data collection.

Instrumentation for the case studies will generally be semi-structured. We need enough specificity in the instruments (e.g., checklists, questionnaires, observation forms) to allow some cross case generalizations to be made on the basis of quantifiable data, while at the same time we need enough openness to help assure that we will capture the qualitative data necessary to fully understand the dynamic interrelationships among the relevant factors. Specific questions applicable to units that have experienced changes in leadership since the core survey will also be administered.

Instrumentation for the demonstration will also involve the re-administration of selected core study instruments. Here, however, primary interest will be in their use in measuring before/after intervention change, although we certainly would look at the changes that occurred from the time of the core survey to the start of the intervention. In addition, questionnaires and semi-structured interview guides will be used to help assess particular aspects of the leadership materials.

Sampling

As mentioned previously, the case study and demonstration units will be taken from the core survey sample. The MTOE units participating in the case studies will be drawn from four installations. Four units will be drawn from each installation, two with high readiness and family adaptation and two with low scores relative to the other units surveyed at the installation. Two types of units (e.g., infantry, armor), balanced in terms of their dependent variable scores, will be selected at each installation. Altogether, the 16 units will consist of 8 Combat Arms, 4 Combat Support, and 4 Combat Service Support units.

The sampling design for the demonstration calls for the same ratio of Combat Arms to other types of units. Here, however, there will be a total of 24 units, 12 treatment and 12 controls, all taken from the lower half of the readiness/family adaptation distribution. Three treatment and three control units will be selected from each of four installations. The assignment of units to groups will be done randomly after the units have been paired by type and

dependent variable scores. In addition to these units, four units will be required in order to pretest the leadership materials and the assessment procedures.

Data Collection

The case studies will be conducted over a three month period beginning in early January 1990. Teams of two or three researchers will visit each installation for approximately two weeks. Focus groups, intensive individual interviews, questionnaires and observation forms will be used to collect the data. If possible, the visits to the separate installations will take place approximately two weeks apart, so that later visits can be informed by earlier ones.

Two waves of data collection will be conducted at the demonstration units, approximately six months apart. A six-month interval was chosen in order to assess the permanence of the impact of the leadership material within the overall timeframe of the AFRP. The first wave, in the October/November 1990 timeframe, will essentially collect baseline data. The second wave in April/May 1991 will collect follow-up data for all units as well as evaluations of the leadership materials at the treatment units. Two member teams should be able to collect all relevant information for each wave at each of the three installations over a two-week period.

Data Analysis

The small size of the samples and the large number of variables of potential interest for both the case study and the demonstration prohibit the use of multivariate analytic techniques on the collected data. Instead, univariate and bivariate distributions of the quantifiable variables will be examined for overall trends in the data. In the case studies, content analyses of the focus group and interview data will be conducted with the aim of developing narratives of themes that differentiate high (family adaptation and readiness) units from low units. Consensual expert judgments will be used in the quantification of any variables extracted from focus group or interview recordings. Of particular interest will be whether the data seem to exemplify or extend the results of the core analyses. Also of major interest will be whether, in the demonstration, the treatment group units exhibited greater gains than the control units on the various readiness and family adaptation measures. The critiques received from unit personnel of the leadership materials will also be carefully examined with a view toward improving these materials.

Outcomes and Products

The outcome of this research is the determination of how unit leadership could effect positive gains in both readiness and family adaptation. A working paper summarizing the results of the case studies will be produced in May 1990. The implications of the findings for the development of the leadership materials will be drawn.

Apparent reasons for any significant changes in unit readiness/family adaptation since the core survey will also be highlighted.

Drafts of the leadership materials will be ready for pilot testing in August 1990. The leadership materials used in the demonstration will be further revised after completion of the analysis of the evaluative data. By October, 1991 this material will be incorporated into a research product, Leadership Practices to Enhance Readiness and Family Support. This product in its final form will be designed to be readily adaptable to become part of the program of instruction at Army leadership schools. At the same time, a technical report (TR13), Effects of Unit Leadership Practices on Readiness and Family Well-Being, will be produced that will present the results of the demonstration as well as attempt to integrate the findings from the case studies and the modeling of the core survey data.

INSTALLATION LEADERSHIP PRACTICES

The purpose of the Installation Leadership Practices project is to identify and describe installation leaders' attitudes and practices which create a supportive environment for Army families and promote family support for the Army. AFRP secondary analysis of the 1985 DoD family survey indicated the importance of satisfaction with the environment for families as a predictor of overall satisfaction with the military way of life. Soldiers and spouses from the exploratory site visits (described in Chapter 4) indicated Army families feel that installations vary considerably in their level of supportiveness for families, and that the leadership of an installation is a critical factor in determining the installation environment for families.

Coordinated with the core research data collection, this intensive examination of leadership practices will use a multiple case study approach at 20 installations to understand how leadership practices affect Army families. The results will provide guidance for installation leadership training materials and the development of an installation leader's handbook on creating a supportive environment for Army families.

Data Requirements

Information is required for this research effort to identify installation leadership practices, policies, and programs which affect the environment for families, and to determine family perceptions of the supportiveness of those policies. Specific requirements include:

- Installation leaders' demographic characteristics, tenure, and family-related training received;
- Installation leaders' attitudes toward Army family concerns, issues and programs, including the perceived impact of Army families on mission readiness;
- Family supportive practices or programs initiated by current installation leadership;
- Assessment of major needs of installation families;
- Leadership practices, policies or programs having both positive and negative effects on Army families;
- Critical incidents that have affected family morale;
- Perceived supportiveness of installation leadership and factors which affect those perceptions;
- Satisfaction with the environment for families and factors which affect this satisfaction; and
- Assessments of the availability and quality of formal support services (medical, dental, housing, educational, recreational, etc.) and informal support services or networks of concern throughout the installation/community.

Understanding the installation/community context also requires information on installation characteristics, installation organization, and community support system. Understanding the Army family context requires information on family adaptation measures and other indicators of family satisfaction. These data will be available from the Core Research Effort.

Methodology

Instrumentation

Data collection instruments for the Installation Leadership Practices project will include:

- Open-ended, qualitative interview guides with some scaled items for individual interviews with installation leaders and service providers;
- A brief, close-ended, forced-choice questionnaire designed for self-completion at the beginning of member and spouse focus groups; and
- Open-ended, qualitative interview schedule for structuring member and spouse focus groups.

The interview guides for installation leaders and service providers will address attitudes toward families and family programs, family-related policies, practices and programs established by the present leadership, and assessed impacts on families.

The brief member/spouse questionnaire will include demographic information, perceived supportiveness of installation leadership, and assessments of formal and informal support services. In addition, several questions from the Core Research Effort related to family satisfaction and commitment to the military will be replicated in the instrument.

The focus group schedules will elaborate and expand on the questionnaire items to obtain situational and causal data, including:

- An assessment of installation-specific policies, practices and programs related to families and their impact on family satisfaction with the environment;
- An identification of critical incidents which affected family morale; and
- Identification of factors which contribute to family assessment of leadership support and formal and informal support services.

Instruments will be developed during the second project year and pretested in conjunction with core effort pretests.

Sampling

A subsample of 20 installations will be selected to maximize the variation in leadership practices and family satisfaction, while controlling for installation contextual factors not directly related to leadership practices. Installation selection will therefore be controlled for MACOM, installation size, and proximity to population centers. Indicators of variation in leadership practices and family satisfaction with the environment will be obtained from available survey data and expert opinion of headquarters family program representatives.

At each selected installation, a total of eight focus groups will be held, four for soldiers and four for spouses, with the following rank distribution:

- Junior enlisted (E1-E4)
- Senior enlisted (E5-E9)

- Company grade officers (01-03)
- Field grade officers (04-06).

A total of eight soldiers or spouses would participate in each focus group. Soldiers would be sampled from units not participating in the core research; spouses would be self-selected volunteers. Oversampling will be required to obtain a minimum of eight participants per group.

Data Collection

Data will be collected at each of the 20 sampled installations in conjunction with the core field effort. Special efforts will be made to avoid duplication with the core research and to minimize the burden on the installation.

Individual interviews will be conducted with the Installation Commander and senior installation staff (i.e., DCG, Chief of Staff, Post Sergeant Major, etc.) as well as the directors of major family programs (e.g., ACS, YA, Child Care, Recreation, Housing, etc.). Individual interviews will require approximately 30-45 minutes.

Focus group interviews will be scheduled for day and early evening hours to accommodate working spouses and will require approximately 90 minutes. The questionnaire to be administered at the beginning of each focus group will take approximately 15 minutes to complete.

Data Analysis

Qualitative interview and focus group data from each installation will be aggregated and analyzed with descriptive and content analytical techniques. Similarities and differences will be identified between leadership and family perceptions, and among member/spouse groups, by rank and family life cycle stage.

Data from the AFRP core effort on family adaptation and family satisfaction will be analyzed to determine if statistically significant differences exist by installation. Data from the focus group questionnaire will also be analyzed to determine differences between installations. Installations will be rank ordered and then categorized by high, moderate or low levels of family morale/satisfaction based on the results from both sources. The practices, policies and programs associated with each installation would be compared within and among categories to identify empirical relationships between specific leadership practices and family perceptions of supportiveness. Composite, descriptive profiles of installations and leadership practices within each category would then be developed on the basis of aggregated focus group questionnaire and interview data. In the presentation of specific findings, installation anonymity will be preserved.

Outcomes and Products

The Installation Leadership Practices effort will result in two products: a Technical Report of research findings and a Research Product for the user community directed toward utilization of the findings.

Technical Report (TR3), Effects of Installation Leadership Practice on Army Families, will describe the methodology and findings from this effort and will include:

- Distribution of family adaptation, satisfaction and support measures across the 20 installations;
- Description of specific leadership practices, policies and programs associated with varying levels of family morale;
- Identification of perceived differences in leadership practices by rank, stage in family life cycle, and other demographic characteristics; and
- An assessment of the relationship between installation leadership practices, family perceptions of installation supportiveness, and family support for the Army.

The Research Product, Leadership Training and Practices for Supportive Army Families, will summarize research results and provide detailed recommendations for:

- Content and structure of leadership training modules on the development of a supportive installation environment for Army families, to be incorporated into the curriculum of the War College or the Command and General Staff College;
- Content and format of a "best and worst practices" handbook for use by installation leadership throughout the Army; and
- An evaluation design for assessing the effectiveness and impact of the training modules and handbook

Both reports will be developed and submitted during the fourth project year.

FAMILY ADAPTATION TO RELOCATION

The military family literature, secondary analyses of Army family survey data bases, and exploratory field investigations conducted in the developmental research activities have all identified relocation as a factor affecting family adaptation to military life, family satisfaction with the military, and ultimately retention of the military member. On this basis, it can be hypothesized that successful family adaptation to frequent relocations is a predictor of successful family adaptation to the Army and of soldier retention in the Army.

The overall purpose of this Core Extension Project is to identify a model set of Army relocation policies and programs which will facilitate family adaptation to relocation and to propose approaches for testing and evaluating the models. Specific objectives indicate:

- Determination of how relocations affect Army families at different stages of the family life cycle and their adaptation and commitment to the Army;
- Determination of how Army families successfully adapt to frequent relocations and to new environments;
- Assessment of the impact of Army PCS policies, practices and programs on family adaptation to relocation; and
- Identification of innovative, pro-active relocation programs used in the private, Federal, and military sectors to assist family adaptation.

These objectives will be addressed through secondary analyses of existing data, a review and assessment of innovative relocation programs, and in-depth, intensive, follow-up research on a subsample of Army families from the core survey who relocate within the six month period following core survey administration.

The major products of this study on family adaptation to relocation will be a technical report focused on the new knowledge gained about the effects of relocation policies and how families adapt, and a research product focused on the identification of model relocation policies and programs. In addition, a series of working papers will be produced from specific components of the relocation extension project.

Data Requirements

Separate sets of data requirements are identified for the research on recently relocated families and for the review of innovative relocation programs. Data requirements for the relocated family research focus on the effects of relocation on the families, how families adjust to relocation, and the effects of Army PCS policies and programs. These data requirements would attempt to capture the chronology of events, actions, and effects associated with the family's relocation, including:

- Army provided preparation for relocation, including the amount of notice given, choice of locations and timing of move, completeness and accuracy of information received in advance on new location, availability and quality of sponsorship, etc.;

- Family initiated preparation for the relocation including family research undertaken on new location, contacts made with other families, counseling with children, advance preparation trips, etc.;
- Availability, quality and utilization of formal support systems, including temporary housing, reimbursements, Army housing assistance, etc;
- Relocation stressors and problems experienced such as acceptability/desirability of new location, timing of the move in terms of other family life events, spouse employment disruption, school disruption, damage/loss of household goods, compassionate tour extensions requested and granted/denied, family separations, length of time in temporary lodging, etc.;
- Availability, quality and utilization of informal social support systems, such as extended family, friends, co-workers, neighbors;
- Personal and family coping resources, styles and efforts;
- Level of family adjustment to new location and of integration with new community; length of time required to achieve normal family functioning; loss of time from units;
- Other family and environmental factors affecting relocation adjustment, such as a handicapped child, pregnancy, housing status, spouse employment status, etc.;
- Army policies, programs or practices impeding or facilitating relocation adjustment; and
- Impact of relocation on family functioning/adaptation and commitment to the Army.

In addition, a variety of demographic variables will be used as control variables, including age, sex, rank, family life cycle stage, number and age of children, number of previous PCS moves, attitudes about prior and new location, etc.

Data requirements on innovative relocation programs include the program's philosophy, scope of services, service population, length of service before and after the relocation, operational characteristics, staffing, costs to both the agency and service recipient, and any evaluative or client feedback data available on the adequacy of the program and client satisfaction with services.

Methodology

Several methodologies are proposed to conduct the family adaptation to relocation project. These include a literature review, secondary analysis of existing data, a review of innovative programs, and intensive research on a subsample of relocated families.

Literature Review

A critical review of both military and civilian literature will be conducted to provide a theoretical and empirical research foundation for the project and to inform the research to be conducted. The literature review will focus on the relocation experience for Army families but include relevant material from other military services and from the civilian community. Specific topics will include Army policies related to relocation, innovative relocation programs, relocation stressors and problems experienced, the

effects of relocation on family adaptation and well-being, and factors associated with successful adaptation to relocation. The literature review will be conducted during Year 2.

Secondary Analyses

Existing data sets, particularly the 1987 Annual Survey of Army Families (ASAF) contain information on relocation which would expand our knowledge base and aid the design of the research and the development of data collection instruments. The ASAF data contain 19 specific indicators about relocation experiences as well as information on the use of formal Army support mechanisms and spouse satisfaction with those supports. Secondary analyses including stepwise regression techniques and analysis of variance (ANOVA) will be conducted to determine the effects of formal support mechanisms on the relocation experience. Secondary analyses will be performed in Year 2.

Innovative Programs Review

The purpose of the innovative programs review is to identify, describe and assess innovative, pro-active relocation programs or services in the military or civilian sector which best help families adapt to relocation. Specific attention will be given to model programs in the Army, other military services or civilian Federal agencies. For example, the Army is presently involved in establishing demonstration relocation programs at Ft. Bragg and Ft. Lewis, and the State Department has an on-going relocation program to assist in overseas relocation. In addition, large civilian companies, such as IBM, Honeywell, Data

General and others, offer a wide range of relocation services to their employees. Services often include buying and selling homes, aid in finding communities that meet family life cycle needs, introductions to community services, and employment finding services for the displaced spouse.

A total of six to eight model programs will be identified through the literature review and through preliminary interviews with relocation program representatives from the Army, the other military services, civilian government agencies, and private industry.

Instrumentation will be designed to collect comparable data from the selected programs. Instrumentation will consist primarily of structured, open-ended, interview guides. Data will be collected through program site visits, interviews with program directors and staff, observation of program operations, and if possible, interviews with a small sample of program clients. Program materials will also be collected and reviewed.

Descriptive and content analysis techniques will be used to develop an overall picture of each program. A comparative analysis of program characteristics, services, and costs will be conducted to identify those features most useful to relocating families.

The review of innovative relocation programs will be initiated in Year 2 and completed in Year 3.

Research on Relocated Families

Follow-up research on a subsample of recently relocated families from the core survey will provide a wealth of quantitative and qualitative data to examine in-depth the effects of relocation on Army families. Data sources for this project will include the core survey data on the relocated families; longitudinal data on a subset of survey items related to relocation, family adaptation, and satisfaction with the military way of life; and qualitative, process data on relocation experiences and effects. Longitudinal data collection of core survey items will enable a more independent and quantitative measurement of relocation effects, which will then be supplemented and enhanced with the qualitative, process information.

Instrumentation. Instrumentation for the intensive research on relocated families will consist of structured, open-ended interview guides designed to collect qualitative and process information on relocation adaptation. A brief questionnaire for self-completion will be designed to recapture a subset of questions related to relocation and its effects on families from the core survey. Instrumentation will be developed and pre-tested in Year 3.

Sample. Sampling will take place after the core survey in order to sample from respondents who participated in the survey process. Respondents who indicated that they would be experiencing a relocation to one of the other sites included in the Core Research Effort within nine months will be included in one of three sampling groups:

- Relocations from one CONUS post to another CONUS post,
- Relocations from CONUS to OCONUS, and
- Relocations from OCONUS to CONUS.

Fifty couples and 20 single parents representing each type of relocation experience will be selected from the core survey sample. Special efforts will be made to include participants who represent different stages of the family life cycle and soldier career cycle. The actual relocation time-frame for the sample will be dependent upon when the core survey is administered.

Data Collection. Data collection will involve one-on-one interviews with the relocated subsample of respondents. The brief questionnaire will be completed by the respondent at the beginning of the interview. Individual interviews will require approximately one hour to conduct. No more than ten sites from the Core Research Effort will be identified for the qualitative data collection phase, and it may be possible to visit fewer sites depending upon where respondents have made a PCS. Test sites will represent both CONUS and OCONUS in order to include all three relocation groups. Approximately 15 couples and 6 single parents will be interviewed at each site. It is expected that the interview process will take approximately three months to complete, and will not begin until six to nine months after core survey administration is completed. The qualitative data collection will take place during Year 4.

Analysis. Descriptive and inferential analyses of the core survey data will begin as soon as it is available. Analysis of the qualitative data will begin immediately upon completion of the data collection phase, and it is expected to take three months to complete the content analyses, descriptive analyses and inferential analyses of the structured interview data and core questions re-administered during this phase of the study. Data analysis will be completed during Year 4.

Design Model Package and Evaluation Design

After the data analysis is completed, the results will be interpreted and incorporated with the results of the innovative programs review. A model relocation package will be designed for the Army, incorporating the most innovative and desirable aspects of the relocation packages investigated with the results of the relocation adjustment findings. The model package will specify Army family needs to be addressed, objectives to be achieved, services to be provided, recommended operating and management structure, staffing required, and estimated program budget. Accompanying this, an evaluation methodology for testing the utility of the program will also be designed. In addition, recommendations will be made for changes in Army relocation policies or practices which would reduce the negative effects of relocation and facilitate family adaptation. This will be a Year 5 activity.

Outcomes and Products

A review of civilian and military relocation literature will be completed as a working paper. It will include a comprehensive review of the relocation literature, focusing on the stressors individuals and families encounter and the resources available to families to combat the negative effects of relocation. The working paper will be completed during Year 2.

A comparison of civilian, federal government and military relocation programs is planned as a working paper to be completed in Year 3. This paper will outline the relocation programs currently in use in each of the three sectors, and the best components of these relocation services.

From a composite of core survey data, the subset of core questions that will be re-administered during this project and qualitative interview data, typologies of respondents who adapt well to relocation versus those who do not, will be developed. Characteristics of respondents in both groups will be described. In addition, an analysis of Army policies and practices, both positive and negative, related to relocation, and how they affect the different typologies will be provided. Findings will be reported in TR4, Family Adaptation to Relocation: Problems and Programs, to be completed in Year 5.

Finally, a Research Product (RP), Model Relocation Policies and Programs, will be produced. As discussed above, this Research Product will integrate the quantitative and qualitative results concerning relocation adaptation, as

well as a methodology for implementing a model, proactive relocation program. A recommended evaluation design to test the model will also be developed. This RP is scheduled for completion in Year 5.

FAMILY ADAPTATION TO SEPARATION

Army-imposed family separations through deployments, extended field exercises, and extended TDYs are a common characteristic stressor of military life. The family's ability to adapt to Army-imposed separations directly affects both the family's functioning and well-being and the soldier's readiness and performance during the separation period. Ultimately, family adaptation to separations can affect their satisfaction with the military way of life and the Army's retention of the member.

The core survey will provide a wealth of information on family adaptation and the use of social support systems. An intensive, follow-up data collection effort with a subsample of families presently experiencing an extended separation will provide an opportunity to measure directly the effects of separation on Army families and to obtain additional information on how families cope with separations and how the Army could either mitigate the stresses of separation or facilitate family adaptation to them. Special attention will be given to the availability and utilization of formal, quasi-formal and informal social support systems, including Family Support Groups, in helping families cope with separations.

The products of this Core Extension Project on family separations will be a technical report and a research product. The technical report will present research findings on the stresses and effects of separations and how different types of families adapt to separation. The

research product will focus on specific recommendations for improved Army policies, practices and programs to support families during separations.

Data Requirements

Data are required on both the subsample of Army families experiencing a separation and on the specific social support systems or services available at the installation to help them. Family-related data include items and constructs on the subsample from the core survey; including: number of separations in last 12 months, length of separations, coping strategies, use of informal support systems, use of formal support systems, personal/family resources, family adaptation and functioning scales, various demographic characteristics and unit characteristics.

A small subset of core survey items which may be affected by the separation experience will be re-administered to the Family Separation project subsample. Additional data on the current separation experience will be collected from the subsample, including:

- Amount of notice of impending separation;
- Preparations made for separation;
- Stresses and problems experienced during separation;
- Presence of and participation in Family Support Group;

- Level and type of support available and received from the member's unit, other unit spouses, installation programs, and other formal or informal support systems;
- Army policies or practices affecting separation stress or adaptation, including handling of special family needs or crises;
- Personal/family coping strategies used to adapt to separation; and
- Recommendations for changes in Army policies, practices or programs related to family separations.

The types of support to be examined will include broad based instrumental support, emotional support, and social support.

In addition, data will be collected on the type of special services provided to separated families and the levels of family member utilization of those services/ programs from the Family Support Group (FSG) leader (if available) and from the directors of key family programs (ACS, Child Care, YA).

Methodology

Instrumentation

Instrumentation for the collection of data from spouses of separated members will consist of two types: a brief, close-ended, forced choice questionnaire repeating items from the core survey related to separation, family stresses and support networks; and an open-ended, qualitative

interview guide for focus group discussions. Brief, qualitative interview guides will also be developed for collection of information from support network representatives (FSG leader, ACS director, etc.). Instrumentation will be developed during the first quarter of Year 3 and pretested in conjunction with the core data collection effort.

Sampling

Sampling will be conducted on two levels. First, from the units which participated in the core survey, a sub-sample will be identified to which a deployment or extended field exercise took place in the seven to nine months following the core survey. The deployment or field exercise must have created a separation of at least 30 days or more for soldiers and their families. A total of eight units will be selected, including four CONUS and four OCONUS. It is expected that a natural variation in the presence of Family Support Groups will also occur, and it would be preferable to have four units with FSGs (two CONUS/two OCONUS) and four units without FSGs (two CONUS/two OCONUS). Such a variation would enable comparisons between the utilization of Family Support Groups and other support mechanisms for separations both CONUS and OCONUS.

The selection of the spouse sample from each unit will be based on the spouses sampled in the core survey. Ideally 25 spouses from each unit would be distributed across officer and enlisted ranks to represent families at different stages of family life and career cycles. Participation in this follow-up project would of course be voluntary, so oversampling would be required.

Sampling would be conducted seven to nine months following the core data collection effort, in Year 4.

Data Collection

Data collection will be accomplished primarily through focus groups with spouses of currently separated members. Spouses will be asked to complete the brief questionnaire (replicating earlier core survey questions) at the outset of the focus group. A focus group discussion would follow to obtain required qualitative data supporting the separation related questions. Separate focus groups will be conducted for officer, senior enlisted and junior enlisted spouses in each unit. If a unit has a FSG, it might also be desirable to interview participating and non-participating spouses separately to obtain different perspectives on the perceived role and value of the FSG. The time required to conduct a focus group is estimated at 90 minutes.

Data will be collected from the support network representatives through individual interviews at each installation. It is anticipated that individual interviews will require 30 minutes to conduct. Data collection will occur eight to ten months following the core survey (Year 4).

Analysis

Data analysis will be conducted at several levels. First, the data from each focus group will be aggregated and analyzed using descriptive and content analysis methods. Focus group data will then be aggregated for the unit as a

whole. Comparative analyses will then be conducted across units to determine similarities and differences by type of spouse group (e.g., senior versus junior enlisted), by location (CONUS versus OCONUS), and by presence of a Family Support Group.

Interview data from support network representatives will be analyzed with content analysis techniques and compared to relevant unit focus group data to determine levels of consonance or dissonance.

Data from the follow-up questionnaire will be tabulated by unit, and compared to responses received from the same spouses in the core survey. Analysis of variance on these repeated measures will be conducted to determine the effects of actual separation on spouse responses. Additional analyses will be conducted to determine patterns of variations and possible factors (e.g., demographic, FSG participation) associated with the variance. Analysis would be conducted immediately following the field data collection during Year 4.

Outcomes and Products

The results of the Family Adaptation to Separation Project will be reported in TR 5, Family Adaptation to Separation: Stressors and Social Supports, to be submitted in Year 5. The report will describe:

- The effects of member separation on family functioning and well-being;
- Army policies and practices which facilitate or impede family adaptation to separations;

- What types of families adapt best to member separations and why;
- How formal and informal support mechanisms are used by different types of families to facilitate adaptation to separation; and
- Which support mechanisms work best for which type of families.

Recommendations will be made to the Army for specific strategies to mitigate the negative effects of family separations, and enhance the formal and quasi-formal support network to facilitate adaptation by Army families. Specific recommendations will also be made to enhance the value of Family Support Groups and to suggest new programs or policies which could be implemented on a test basis. These recommendations will be described in detail in a Research Product, Strategies to Support Families During Separations, to be submitted in Year 5.

OTHER PROJECTS

Additional Core Extension Projects have been suggested and are under consideration. One of these is the development and validation of a screening instrument to help identify spouses and families most in need of Army support. The instrument would tap many of the dimensions described in the Core Research Effort as elements of spouse preparedness for deployments and separations, including knowledge of and access to various emergency and support services, access to financial resources, presence of a will, insurance, power-of-attorney, telephone and transportation, etc. It would be used to assist local Family Support Division's to identify needs and target outreach services. This project, as well as others that may meet high priority Army needs, will be considered along with the five proposed projects to help insure that the research efforts selected to address the policy/program objectives will have the maximum payoff for the Army.

CHAPTER 7: COMPLEMENTARY RESEARCH

As indicated in Chapter 3, Complementary Research involves focused research on special populations or issues that address AFRP questions but do not rely on the Core Research data bases. There are four planned Complementary Research efforts:

- Model Spouse Employment Program, which leads to the development of one of the six Policy/Program enhancement packages;
- Project A/Family Effects Research, which focuses on family formation and job performance issues for first-term enlisted soldiers;
- Analysis of the 1987 Annual Survey of Army Families, which contributes to family impact framework development for family policy and program issues; and
- TPU Attritee Research Project, which addresses family issues in retention for the Reserve Component.

Each of these efforts is discussed in detail in this chapter.

MODEL SPOUSE EMPLOYMENT PROGRAM

This research includes two tasks aimed at improving Army policies and programs to increase spouse employment/career opportunities and better prepare spouses to obtain employment. These tasks are: (1) specify changes or interventions, based on a review of Army and other policies/programs; and (2) design and implement an evaluation of the most promising intervention selected and implemented by the Army. The review of spouse employment programs will be directed by the AFRP spouse employment model and will focus on programs designed to reduce barriers to spouse employment, enhance spouse employment capabilities, and/or increase opportunities for spouses. We will also seek to focus on employment needs and outcomes that have major impact on family adaptation, readiness, and retention. In turn, the program review and evaluation of a selected program will contribute to the framework development by allowing a test of key model components both for the spouse employment model and the overall project framework.

The program review and review of design issues will be undertaken in Year 2. The final evaluation design and the evaluation will be carried out in Years 3 and 4 after the selection of an intervention for trial implementation.

Several kinds of spouse employment interventions will be considered for implementation. These include interventions already underway or planned by the Army as well as ones from other military services or from the civilian sector.

The Army and the DoD have begun several initiatives relating to spouse employment including (1) the Family Member Employment and Personal Development Program being implemented by the Army Community Service (ACS); (2) hiring preferences for military family members in Federal civil service positions under several DoD wide legal authorities; and (3) joint programs by ACS and CPO to provide consolidated job assistance to family members. These programs seek to reduce employment barriers and increase spouse access to existing employment opportunities in the civilian and Federal sectors.

Several other interventions currently being developed are also potential candidates for implementation and evaluation. These include the Joint Employment Management System (JEMS), job skills training, and regulatory and other means to enhance military family members' opportunities for self-employment.

The selection of a specific intervention to be implemented will be based on several factors, including: (1) evidence on the effectiveness of the different spouse employment programs and policies (based on such sources as: evidence from any available evaluations; program records; and the reputation of the programs/policies among knowledgeable program staff and others); (2) the assessment of program/policy priorities by CFSC and others in the Army community; (3) the experience and preferences of spouses who have used the programs or policies; and (4) information on the likely future status of the programs/policies in view of Army and DoD budget priorities and other factors.

In Year 2, AFRP staff will review Army and DoD employment programs/policies/practices along with a limited number of civilian sector programs designed to help groups who have characteristics in common with Army spouses (e.g., corporate programs for spouse employment in relocation). In conducting our review, we will examine different program features vis-a-vis the employment and career barriers Army spouses face. Additionally, we will solicit from policy makers, program personnel, and Army spouses, information on the seriousness of the barriers spouses face for meeting employment and on career development concerns as well as on their importance for the Army's mission, particularly readiness and retention. Cost and other practical implementation issues will also be assessed. Based on this review, the different possible interventions will be prioritized. With COR review and concurrence, we will recommend one intervention as a model and assist the Army in its evaluation.

Data Requirements

The data needs for this task are two-fold. First, to identify the appropriate interventions to implement and evaluate, data are needed on the current and future employment-related needs of spouses and the components of employment programs/policies/practices. Second, once the intervention has been targeted and implemented, data will be needed to determine its effectiveness.

As part of the process of targeting policies or programs for implementation and evaluation, existing survey data will be used to assess spouse employment problems and needs. Surveys or discussions with spouse employment

program personnel and spouses will also be conducted to obtain information about existing programs, and perceived barriers to spouse employment/careers.

After the intervention has been selected, both process and outcome measures will be needed to determine its effectiveness. Examples of outcome variables include: the number of participants who obtain jobs, earnings of those who become employed, the length of time required to obtain jobs, the participant's satisfaction with the job obtained, and the effects of spouse employment on the soldier's career, readiness, and retention. Process variables describe the implementation of the evaluated program and will be obtained from a variety of sources including staff interviews, participant interviews, on-site observation, and program records.

Methodology

We will use several combined strategies to collect the information necessary to select appropriate spouse employment interventions. Information about employment programs/policies/practices will be obtained from a review of existing Army programs. Installation level data, obtained from existing data and from a survey of installations, will provide information on the existence, scope, and services of available spouse employment programs. Information on costs and other practicalities for implementation/evaluation will also be obtained. Additionally, a needs assessment is planned to provide more detailed information of programs and spouse needs. To accomplish this, staff will select installations reflecting the range of program variability. A proposed sample of

spouses (representing groups such as Federal employees, spouses employed in the civilian sector, and unemployed spouses) can then be surveyed at each site. Instruments will include questions to measure employment and training needs, effective employment assistance techniques and other employment/career variables, as well as information on the relationship of spouse employment to readiness and retention, couple communication, family adaptation, and other factors in the study model. These approaches will be supplemented by analyses of spouse employment needs using existing survey data.

Subsequently, an evaluation of the selected program will be designed and implemented. The exact nature of this evaluation will be determined on the basis of the particular intervention selected for implementation by DA, but the general approach is indicated below.

Sites will be selected to represent a range of variation in the civilian labor market and Army organizational factors. At least 3-4 installations will be desirable for the research, although the actual number to be included will be determined on the basis of cost and other considerations.

The core survey sites are scheduled to be selected in Year 2. It should be possible to select evaluation sites that are included in the project's core field investigation to take advantage of data that are also being collected for the core effort.

Within each site, the preferred design is for participants to be randomly assigned to "treatment" or "control" conditions, where the treatment condition represents participation in the selected program and the "control" condition is the receipt of "services as usual." Although it may be difficult to obtain spouse agreement to be in the control group if the treatment appears likely to be much more effective, several factors may help make it possible to achieve a randomized design. These include: (1) it is likely that more spouses will want to participate than can be accommodated in the treatment, so random assignment of applications can be a necessary and acceptable way to achieve fairness in the program; and (2) since most spouse employment interventions are likely to be short-term in nature (lasting perhaps one or a few months), those initially assigned to the control group can later be accommodated in the experimental program as it goes on, with new control groups formed from lists of new applicants.

The required sample size for the evaluation can be determined on the basis of a statistical power analysis, which would take into account such factors as the likely job placement rates resulting from program participation and potential attrition from the evaluation's control or comparison groups.

The design is expected to include data collection on individuals at several time points, including a pretest and one or more follow-ups. The timing of the follow-ups will depend on the particular type of program and the outcome measures. For a job-search program, it would be appropriate to have the first follow-up after a relatively short interval (e.g., four to six weeks), followed by longer-term

follow-up to obtain information on employment outcomes over time. Program data also need to be collected over time and across sites. If a program is being considered for Army-wide implementation, it will be important to obtain information on program implementation and, if possible, on the operation of a "mature" program. Depending on the particular intervention selected, this may be feasible (for instance, since ACS programs are being implemented successively at different installations, it should be possible to include ones at different stages of development).

Outcomes and Products

The results of this study will be reported in two technical reports. TR17, Suggested Improvements in Army Spouse Employment Assistance Programs, will recommend existing or innovative programs and/or policy options designed to improve spouse employment. Each policy or program recommended will be described in sufficient detail so that the Army can implement the change in a limited trial or experiment prior to Army-wide adoption. TR18, Evaluation of "New" Spouse Employment Assistance Program, will present the results of the evaluation of the selected spouse employment program. It will also describe the evaluation methodology and present recommendations based on the evaluation results.

PROJECT A/FAMILY EFFECTS RESEARCH

In 1982, ARI initiated Project A, "Improving the Selection, Classification, and Utilization of Army Enlisted Personnel." Project A is one of the most comprehensive and long-range research projects ever undertaken in the social sciences. The overall goal of the project is the development of a computerized allocation system that will match available personnel resources with Army manpower requirements, taking into consideration the aptitudes, interests, backgrounds, and performance levels of first and second tour soldiers.

Both Project A and the Army Family Research Program are being conducted by the Manpower and Personnel Research Laboratory (MPRL) at ARI. The operational objectives, research designs, and schedules of both projects permit AFRP researchers to capitalize on the work of Project A. Both projects plan to use job performance and retention as outcome criteria. Both projects also look at performance indexes as predictors. In Project A, earlier performance (e.g., at Advanced Individual Training) will be used to predict later on-the-job performance; in the AFRP, models could capture the relationships of earlier performance/readiness on later performance/readiness in order to determine how family factors impact on the relationship, e.g., how do intervening marriages affect performance levels over and above what could be anticipated from earlier performance levels.

Both projects are also concerned with individual differences. The measurement of individual differences in aptitudes, interests, and non-cognitive predictors is a

major focus of Project A selection research. While the emphasis on individual differences in the AFRP is less, measures of individual differences (e.g., aptitude, temperament and interest measures) are important to include as antecedent, explanatory variables and as possible moderators of family-related phenomena.

The current schedules of both projects are sufficiently congruent to allow the administration of AFRP questionnaires to samples of soldiers participating in Project A research. There are four points at which this overlap in sampling might take place. The AFRP has already taken advantage of the first one at Advanced Individual Training (AIT). Project A is currently in the process of collecting predictor and school criteria from the 46,500 first tour soldiers in 21 Military Occupational Specialties (MOS) that constitute the Project A longitudinal validation sample. At the request of the AFRP, Project A staff have administered an AFRP questionnaire to about 10,000 of these soldiers immediately before their graduation from AIT.

Approximately 12,000 soldiers of the Project A longitudinal validation sample will be administered a series of performance measures in the summer/fall of 1988. Approximately 2,500 of these soldiers will have completed the AFRP questionnaire when they were in AIT. Project A staff will distribute (and possibly administer) an AFRP questionnaire to these 2,500 soldiers immediately after they have finished taking the Project A performance measures.

The third opportunity to capitalize on the Project A data base will arise during the AFRP core survey. By the time these data are collected, Project A will have

administered a battery of experimental predictor tests to about 55,000 enlisted soldiers. Project A performance measures will probably have been administered to over 20,000 of these soldiers. There is a good chance that enough soldiers will be in samples of both projects to provide very useful additional predictor and performance data for the AFRP modeling efforts.

The major advantage for the AFRP of making use of the Project A data base is the unprecedented amount of performance and individual difference data available for each soldier in the sample (see descriptions below). This, coupled with the opportunity to study the unique problems of young couples in the Army in a longitudinal framework, will permit a thorough examination of the impact of family factors on job performance early in soldiers' careers while controlling for individual differences. In addition, the relationship between family factors and individual differences can be explored to examine, e.g., whether higher aptitude personnel have different sets of family problems than those with lower aptitude.

Data Requirements

The Project A longitudinal sample will provide three sets of data that otherwise would not be available to the AFRP:

- (1) Experimental Battery scores indicating measures of temperament, vocational interest, and job reward preferences. These scores plus the 9 subtest scores of the Armed Forces Vocational Aptitude Battery (ASVAB) have been combined by Project A researchers into 20 predictor composites.

- (2) Performance measure scores obtained from hands-on and job knowledge tests, Army-wide, MOS-specific, and task performance rating scales, job history and job satisfaction questionnaires, and personnel files. These scores have been combined by Project A researchers into 5 performance constructs.
- (3) School knowledge test scores and peer and supervisory ratings obtained at AIT. These were administered at the same time as the AFRP graduate survey.

In addition, the AFRP will need data on family and soldier characteristics, attitudes and experiences to correlate with the Project A data. These data needs are similar to those described for the core survey.

Methodology

Instrumentation

The AFRP AIT graduate survey consisted of 48 questions, many with separate subitems. The AFRP questionnaire covered a number of content areas, including reasons for enlistment, comparisons of military and civilian life, attitude toward Army support services, family status and plans, family adaptation, and satisfaction with the Army.

The AFRP questionnaire that will be administered to the Project A sample will contain many of the same items that appeared in the AIT survey, but will also cover most, if not all, the constructs discussed in the Member/Family section of the Core Research Effort. In fact, whenever possible, the Project A and core survey instruments will use the same questionnaire items for comparability. However, since the

Project A sample consists entirely of enlisted personnel in either their first or second tour of duty, items appropriate only for officers or senior NCOs will be excluded from the questionnaires.

Sampling

The Project A longitudinal validation sample consists of approximately 46,500 soldiers in 21 MOS. The sample of MOS were selected to be representative of Army's designated Career Management Fields, high density and high priority MOS, ASVAB selection criteria, racial and sex composition, and the kinds of tasks or jobs that soldiers do. The MOS selected include such different jobs as Infantryman, Cannon Crewman, Communications-Electronic Radio Repairer, Ammunition Specialist, Motor Transport Operator, Intelligence Analyst, Unit Supply Specialist, and Military Police. Soldiers entering these MOS over a period of one year beginning in the Summer/Fall of 1986 constitute the sample. These soldiers will have been in the Army approximately 18 months when the performance criterion data are collected in the Summer/Fall of 1988.

Data Collection

The AFRP questionnaire will either be administered by Project A staff at the end of the performance measurement sessions or distributed by the staff for the soldiers to complete later. Which alternative is selected depends upon the amount of time available after the performance measures are administered. Since the length of testing varies from MOS to MOS, there may be some MOS where there is sufficient time for the Project A staff to administer the measures and

other MOS where there is not. (The set of measures for each MOS has not been finalized at this time.) The AFRP questionnaire will take approximately 45 minutes to administer.

Analysis

The AFRP/Project A sample will be followed up through June, 1991 by means of Army computerized personnel files. Changes in marital status, number of dependents, promotion rates, reenlistment eligibility, attrition, and actual reenlistment decisions can thereby be tracked for this longitudinal sample.

Owing to the sheer volume of data collected by Project A, the AFRP data from both the AIT and field questionnaires should be available considerably before the Project A data. Initial analyses will therefore concentrate on reducing the number of questionnaire variables and increasing the reliability and meaningfulness of the retained variables. The analyses will then test hypotheses concerning how individual variables hold across different types of soldiers (MOS, married/unmarried, single parents, etc.), possibly pooling subsamples as a result. Once the Project A predictor and performance data become available, the types of analyses described in the Analysis and Modeling section of the Core Research Effort will be accomplished. As many of these analyses will be finished before the core analyses are begun, the results should inform and help guide the development of the core models. Later analyses, which will relate the personnel data obtained from Army computerized file to earlier questionnaire response data, will be used to further refine the core models.

Outcomes and Products

The results of the analyses of the AIT graduate survey data will be described in a working paper which will be completed in Year 3 of the contract. The paper will concentrate on findings on the relationships between family factors and AIT performance. The apparent impact of soldier characteristics (e.g., aptitudes, interests, temperament) on such factors as attitude toward family life, comparison of military and civilian life, and family adaptation will be reported.

A Technical Report (TR11) will also be prepared describing the results of the analyses of the Project A/AFRP data collected in the field. This report will feature the relationships found between family factors, family composition changes, and major performance constructs and will include material from the earlier working paper. The report is planned for March 1990. A follow-up working paper will be produced in September, 1991. It will describe the changes in family factors, promotion rates, enlistment status, and the like that occurred in the AFRP/Project A sample since its administration in the Summer/Fall of 1988.

THE 1987 ANNUAL SURVEY OF ARMY FAMILIES (ASAF) ANALYSIS

The AFRP staff will analyze data from the 1987 Annual Survey of Army Families under a Letter of Agreement between the Community and Family Support Center (CFSC) and the Army Research Institute (ARI). This activity has two major objectives: it will allow the AFRP to provide information needed by CFSC on family needs and on effects of Army family policies and programs; and it will contribute to model development and survey measurement for the AFRP project. The analyses will provide CFSC with: (1) data needed for the General Officers Steering Committee (GOSC) meeting scheduled for April 1988; (2) information on Army Family Action Plan (AFAP) issues, for use in AFAP evaluation and planning; and (3) information on Army spouses and families, including characteristics, service/program use and satisfaction, and support for the soldier's military career.

The analyses of these survey data will also make several important contributions to the AFRP research development. These include: (1) testing and refinement, through analysis of new measures used in the 1987 spouse survey, of measures for use in the AFRP survey and other data collection activities; (2) identification of possible changes in family factors and experiences since the 1985 DoD survey and other prior surveys; and (3) preliminary analysis of elements of the overall AFRP research framework and research area frameworks.

The spouse survey analysis results have several major audiences. The analyses of issues for CFSC will be presented in the form of a report, supplementary tabulation, and briefing materials. These will be designed to address

the information needs of commanders and service providers, who increasingly need quantitative data on service needs and programs. Secondary audiences for the CFSC report are program personnel at the DA headquarters level, policy makers with responsibility for family policy and programs and for resource allocation, and researchers concerned with Army family issues. The final audience for the analyses is AFRP project staff involved in instrument development, model development, and measurement.

Data Requirements

The ASAF data were collected by National Computer Systems (NCS) under a contract with Soldier Support Center (SSC), using a mail survey sent to a sample of approximately 20,000 spouses of active duty Army personnel in June 1987. Approximately 12,000 completed instruments were returned, and preliminary file construction, editing, and tabulations have been done by SSC. The data for the analyses will be provided to AFRP by SSC.

Methodology

The data analysis will focus on a series of issues addressed in the survey. These include: the situation of Army spouses and families in 1987; Army family programs and services; AFAP issues and responses; and the relationship between the spouse and the larger Army community, especially spouse perceptions of leadership support for families and spouse support for, and commitment to, the soldier's military career. These analyses will contribute both to the report for CFSC and to the AFRP model development. Additionally, item distributions, item interrelationships,

and relationships to other variables in the model will be analyzed for use in the AFRP survey development. Questions from this survey have already been reviewed, and several have been included in the draft AFRP spouse survey instrument.

The analysis will use both quantitative data, from responses to the survey items, and qualitative data, from comment sheets filled out by survey respondents. Analyses of the quantitative data will use frequencies, cross-tabulations and, where appropriate, measures of central tendency (means, medians), for the spouse population or for subpopulations defined by such factors as location, family life course stage, or soldier career stage.

Content analysis of the qualitative data will be used to supplement the quantitative analyses, by providing in-depth understanding of relationships and by identifying additional themes or issues that were not addressed in the survey questions. The qualitative data will provide quotations and examples that illustrate and expand upon the results of the quantitative analyses. Qualitative responses will also be used to help determine if survey items need to be modified or new items developed for the AFRP survey.

In addition to analyses of the 1987 survey, analyses of data from the 1985 DoD Surveys of Officer and Enlisted Personnel and Military Spouses will be used for comparison and analysis of trends. Those areas where survey items can be compared include: spouse employment; volunteer work (to some extent); family factors (e.g., number and ages of children, bicultural families, etc.); and Army life satisfaction.

Findings of other surveys of Army personnel and spouses will also be cited where appropriate, for comparison, trend analysis, and explication of specific Army family issues.

Outcomes and Products

Several products of this activity will be prepared for CFSC use. These include the report, supplemental tabulations, briefing materials and a copy of the analysis file and accompanying documentation. The report will include text reporting the analyses and summary tables of results. It will also include an introduction, a description of study methodology, and a discussion of results and their implications for Army family research and policy. An executive summary will accompany the report.

Detailed tabulations will be presented in a volume of supplementary tabulations, which can be used by readers with specific program or research concerns.

Briefing materials will be developed to present major findings to the GOSC at its meeting in April 1988. Findings will be presented in the form of graphics, numbers, and limited text. These materials will be developed in consultation with CFSC staff responsible for the GOSC briefing.

Additional products for use by AFRP include results of survey item analyses (both quantitative and qualitative), and summaries of analysis results that address key modeling issues.

TPU ATTRITEE RESEARCH PROJECT (TARP)

The final complementary effort currently in progress as part of the AFRP is the TPU Attritee Research Project (TARP), a research effort addressing retention issues in the Reserves. The adoption of the Total Force policy has increased the importance of the Reserve Components in the overall U.S. military posture and has given the Reserves more responsibility for the defense mission. Thus, it is increasingly important to examine retention in the Reserve Components and to understand the factors that influence reservists' decisions to stay in or leave the force.

A problem of particular concern to Army management is the increasing attrition rate of U.S. Army Reserve (USAR) enlisted personnel during their first enlistment in a Troop Program Unit (TPU). In response to this problem, the Deputy Chief of Staff for Personnel (DCSPER) has initiated a two-year, sixteen project initiative to investigate USAR attrition. The goal of the FY 87-88 USAR Personnel Research Strategy is to identify the relative importance of various causes for this attrition problem and to recommend solutions.

An important element of this strategy is to survey a sample of TPU attritees directly regarding their USAR experiences, reasons for leaving, and general perceptions of the USAR image and role. Since spouse and family considerations are hypothesized as key factors affecting TPU attrition, this element of the research is being conducted as part of the Army Family Research Program.

Five topic areas have been identified for the TARP project which include:

- General perceptions of the image and role of the USAR;
- Reservists' vision of commitment to the USAR;
- Perceptions of the USAR experience;
- Unfulfilled expectations of reservists; and
- Reasons for leaving the TPU.

Data Requirements

Data are needed from TPU attritees that provide information about the topic areas noted above. An initial search, conducted to determine the availability of existing data bases that could address the study objectives, concluded that TARP would require original data collection.

TARP is planned as a descriptive research effort of modest scope. The emphasis will be on individual and family factors, reasons for joining the USAR, reasons for leaving the USAR, civilian work, leadership and morale, training and unit operations, role of the USAR, and understanding of commitment to the USAR.

Methodology

The TARP effort is currently in progress; the questionnaire has been developed, the sampling procedure has been identified and data collection was initiated in

December 1987. The following discussion reports the procedures that have been used for instrumentation and sampling, those currently in use for data collection, and those planned for analysis.

Instrumentation

The data collection instrument for TARP is a 141-item questionnaire that is designed for self administration. Respondents mark answers on a standard format answer sheet that can be optically scanned.

The questionnaire was developed during the summer and fall of 1987. Representatives from ARPERCEN, ODCSPER, OCAR, FORSCOM, and SSC-NCR served as a steering committee to ARI and RTI and provided guidance on issues, content, specific items, and format for the instrument. The instrument was pretested and refined based on feedback from the pretest.

Sampling

The TARP sample is selected in connection with an ongoing reserve project in which all members of the Individual Ready Reserve are asked to report to recruiting stations during their birth month to update their personnel records. The TARP sample is a subset of the sample selected monthly by ARPERCEN for the IRR screen. The subset consists of reservists in paygrades E1-E6 who have attrited from a TPU during the past year and who have not been selected to participate in the "Sample Survey of U.S. Army Individual Ready Reservists". The actual sampling is being carried out by ARPERCEN using Reserve personnel files.

Data Collection

Data collection -- which began in December 1987 and will conclude in May 1988 -- uses a mail out, mail back methodology. Selected personnel are sent a questionnaire which they are asked to bring to the recruiting station when they appear for the IRR screen. If they have not completed the questionnaire prior to arriving, recruiters ask them to complete it at the recruiting station and mail the answer sheet to RTI. Because selected personnel are on active duty only for the day they report to the recruiting stations, there is no opportunity to do a follow-up with subsequent mailings to nonrespondents.

It is recognized that the effort has the potential to yield biased results due to non-response of selected personnel. Disenchanted personnel may not participate, and their responses (if they do answer) may differ from those of individuals who do participate. Despite this limitation the data are of interest to the Army since those who respond are considered to have the greatest interest in the TPUs and are those most likely to be receptive to influence from the Army.

Analysis

Analyses will be primarily descriptive, consisting of cross tabulations of key outcome variables and other questionnaire items. Analyses will be guided by the five major objectives of the research and will examine issues and concerns. Some of the questions that can be addressed and may be used to organize chapters in the final report are noted below.

- What are the military and personal characteristics of attritees from TPUs? How do those characteristics vary by type of USAR unit?
- What are the key reasons attritees report for joining the TPUs?
- What are the key reasons attritees report for leaving the TPUs?
- What are the family compositions of attritees?
- How important are family factors in the decision of attritees to stop attending drills with their USAR units?
- What is the civilian work experience of attritees and what is the attitude of civilian employers toward USAR participation?
- How important are civilian work factors in the decisions of attritees to stop attending drills with their USAR units?
- What type of experience do attritees report in their USAR units? What is the quality of leadership, morale of unit, training experience?
- What is the attitude of attritees about the role of the USAR in the defense of the U.S.?
- What is the nature of the commitment that attritees perceived they made when they joined the USAR?

A major theme throughout these analyses will be to identify the nature and type of family configurations and the role that families play in the attitudes of respondents and their decisions to leave the TPUs.

Outcomes and Products

Two types of products are planned for TARP: a volume of supplementary tabulations, and a substantive report. The supplementary tabulations will show crosstabulations of all questionnaire items by selected variables (e.g., prior service status, pay grade, sex, type of unit, etc). The substantive report will describe the problem, methodology, and main findings from the study and will address questions and issues noted above.

It is anticipated that results will provide information which the Army can use to monitor and assess the effectiveness of current policies and programs as well as determine future needs. The report is planned for late FY88.

OTHER RESEARCH

Additional Complementary Research Efforts have been suggested and are under consideration. One option being considered is expanding the AFRP scope to incorporate research on family issues affecting DA civilian employees, especially those in overseas and remote locations where the concerns closely parallel those affecting active duty personnel. This effort would focus on retention, willingness to relocate, and job performance as Army outcomes, and would address a range of family adaptation and spouse employment factors. This research, and other opportunities to conduct research on special Army populations or capitalize on ongoing family projects, will be considered for inclusion in the Plan based on Army priorities and the availability of resources.

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APPENDIX

WEIGHTING, ESTIMATION, AND SAMPLE SIZE REQUIREMENTS

I. ANALYSIS WEIGHTS

Analysis weights will be computed for the sample respondents for use in computing estimates of characteristics of the survey population. Sampling weights are prescribed by the probability structure used to select the sample and therefore permit the calculation of unbiased estimates. Adjustments will be made to the sampling weights to compensate for survey nonresponse resulting in analysis weights.

The sampling weight, $W(i,j,k)$, for the k -th sample member in the j -th unit (second stage sampling unit) in the i -th FSU (first stage sampling unit) is given the reciprocal of his or her probability of selection, $P(i,j,k)$. Specifically,

$$W(i,j,k) = 1/P(i,j,k),$$

where

$$\begin{aligned} P(i,j,k) = & \text{(Probability of selecting FSU } i) \\ & \times \text{(Probability of selecting unit } j, \text{ given the FSU} \\ & \text{selection)} \\ & \times \text{(Probability of selecting person } k, \text{ given the} \\ & \text{selection of FSU } i \text{ and unit } j). \end{aligned}$$

Total survey nonresponse occurs when no usable response is obtained from a sample member. To compensate for the potential bias caused by such nonresponse, the sampling weights of the survey respondents will be adjusted so that their sum is equal to the number of persons in the survey population. Weighting class procedures will be used to compensate for nonresponse. Under this procedure, the survey population is divided into mutually exclusive weighting classes (groups) that are internally homogeneous with respect to important survey measurements or design features. Then the sampling weights for respondents within each weighting class are adjusted so that they sum to the population count for that class.

The nonresponse adjusted (analysis) weights, $W'(i,j,k)$, for each respondent in weighting class 1 will be obtained by multiplying his or her sampling weight by the following nonresponse adjustment factor:

$$R(1) = \sum W(i,j,k) / \sum_R W(i,j,k)$$

where the numerator and denominator are the sums of the sampling weights for all sample members and for responding members, respectively, in weighting class 1. Then the corresponding analysis weight is

$$W'(i,j,k) = R(1) W(i,j,k).$$

II. ESTIMATION PROCEDURES

Consider the estimated total value, \hat{T}_d , of some characteristic of a domain (subset), d , of the survey population. This value is unbiasedly given by

$$\hat{T}_d = \sum W(i,j,k) Y(k) \delta_d(k) \delta_e(k),$$

where

$W(i,j,k)$ = the design prescribed sampling weight for person k in unit j in FSU i ,

$Y(k)$ = the value of the characteristic for sample member k ,

$\delta_d(k) =$
 1, if the k -th sample member is in domain d
 0, otherwise,

$\delta_e(k) =$
 1, if the k -th sample member is an eligible member
 of the survey population
 0, otherwise, and

the summation is over all sample members. In practice, the sampling weights, $W(i,j,k)$, are replaced in this formula by the analysis weights in order to compensate for nonresponse. The estimate then becomes

$$\hat{T}_d = \sum W'(i,j,k) y(k) \delta_d(k) \delta_e(k) .$$

An estimated ratio, such as a mean or a proportion, is then given by the ratio of two estimated totals.

III. SAMPLE SIZE REQUIREMENTS

Two different approaches can be used to develop a framework for specifying sample size requirements for the survey. The first focuses on the precision of parameter estimates developed from cross-sectional observations, while the second addresses the precision of parameter estimates of a multivariate model. Each is briefly described below.

A. Precision of Parameter Estimates

An indicator of the precision of an estimator is its standard error (the square root of its variance). Modelling of the standard errors for the proposed design will be used to indicate the precision to be expected.

Since the standard error of an estimated proportion can be expressed as a function of the population proportion being estimated, it is convenient to model the standard error of a sample proportion. If \hat{p} represents the sample estimate of the population proportion p , then the sampling variance of \hat{p} can be expressed as follows:

$$\text{Var}(\hat{p}) = \text{DEFF } p (1 - p) / n,$$

where n = the sample size and
DEFF = the design effect.

The design effect is the ratio of the actual variance of the sample statistic divided by the variance based on a simple random sample of the same number of observational units. A design effect of one indicates that

the actual precision is equal to that of a simple random sample of the same size. Typically, the design effect is increased by clustering effects and unequal weighting and reduced by stratification effects. Clustering is expected to be the predominant effect in the proposed design, and design effects between one and three are expected for the variables of analytical interest.

A simple way of using the DEFF value is to divide the actual sample size or the domain sample size by it to obtain the "effective n," the size of a simple random sample that would have resulted in the same degree of precision. For example, with DEFF of 4.0 and an actual sample size of 4000, the "effective n" is 1000. The value of the "effective n" can be used in place of "n" in the sample formula

$$p(1 - p)/n$$

to compute standard errors of estimated proportions.

The expected standard errors under the proposed design for various values of p , DEFF, and n , the number of observational units used to estimate the proportion p are shown in Table 1. The actual standard errors will, of course, be calculated from the sample data, taking into consideration the full complexity of sample design. It is evident from the table entries that estimates of proportions based upon the full sample ($n = 16,000$) will provide very precise estimates of proportions between 10 percent and 90 percent. In fact, precision is adequate for this range of proportions for samples as small as 2,000. Samples as small as 100 yield adequate estimates for larger proportions. However, estimates for proportions smaller than 50 percent lose precision rapidly as the sample size decreases beyond 2,000.

B. Statistical Power Analyses for Multivariate Models

As discussed in earlier sections of this research plan, a number of critical subpopulations were specified for addressing important issues across the four tasks. It is expected that multivariate regression models will need to be specified and estimated for each of these critical subpopulations to address these important issues. It follows that the sample sizes for these critical subpopulations should be large enough so that the power of detecting large population regression parameters is high. A rule of thumb often used is that for each estimated regression parameter

25 observations are needed to generate stable regression parameter estimates. Thus, if we are estimating a model with 20 parameters, then an effective sample size of 500 observations would be desirable. Assuming a design effect of two because of cluster sampling and unequal sample selection probabilities, the required sample size becomes $2 \times 500 = 1,000$.

This rule of thumb has a serious limitation. The precision of estimated regression parameters and hence the power of the statistical tests hinges not only on the sample size, but on the characteristics of the design matrix (i.e., X) and the error variance ($\hat{\sigma}^2$) which is a function of the squared multiple correlation (R^2). The estimated covariance matrix of the estimated regression parameters is $\hat{\sigma}^2 (X'X)^{-1}$. We are most interested in the diagonal elements of this matrix, the estimated variances of the regression parameters. If one or more near linear dependencies (i.e., multicollinearities) exist among the independent variables, then some of the diagonal elements of $\hat{\sigma}^2 (X'X)^{-1}$ can be extremely large regardless of the sample size. This means that the precision of the associated regression parameter estimates are low and, consequently, so is the power.

In order to perform a power analysis for regression analysis some assumptions need to be made concerning $\hat{\sigma}^2$ and $(X'X)^{-1}$. Without a specific regression model in mind and reasonable corresponding estimates of $\hat{\sigma}^2$ and $(X'X)^{-1}$ it is impossible to do a power analysis. However, some preliminary regression models used to predict enlistment intentions were applied to the 1985 DOD Member and Spouse Survey data set to generate some preliminary findings concerning factors in enlistment decisions. The standard errors of regression coefficients from these analyses can be used, under certain assumptions, to conduct approximate power analyses. These regression analyses are described in detail elsewhere and summarized here.

The regression model providing the standard error estimates involved modeling enlistment intentions for 9,125 enlisted personnel. The dependent variable was the self assessed likelihood of reenlisting which ranged from 0 (no chances in 10) to 1 (10 chances in 10) with intermediate scale values in increments of 0.1 (e.g., 0.2 (2 chances in 10)). The independent variables were selected to represent four broad classes of variables that would be expected to predict reenlistment intentions. The variable classes were individual and family factors (e.g., sex); family program participation variables (e.g., participation and satisfaction with

recreation programs); military job and career variables (e.g., enlistment term); and military environment variables (e.g., satisfaction with opportunity to serve one's country). There were 27 regression parameters representing the effects of the above variables. All of the standard errors of the regression coefficients were of the same order of magnitude ranging from 0.010488 for sex to 0.025909 for opportunity to serve one's country. The average standard error was 0.015781. The regression parameter estimates ranged from -0.005 to 0.168. (Six of the 27 estimated parameters were greater than 0.10 so that we may regularly expect parameters this large in well specified subsequent models.)

Regression parameters of 0.05, 0.10, and 0.15 were considered to be small, moderate, and large effects, respectively. For example, a parameter with a value of 0.10 indicates that a one unit change in the variable associated with that parameter increased the self assessed probability of reenlistment by 0.10. Most of the parameters were associated with dummy variables representing levels of categorical variables so that their values measure effects as contrasts with the level left out of the model.

Using the regression results, the standard error of a typical regression coefficient was estimated for sample sizes of 500, 750, and 1,000. It was assumed that a better specified model would increase the R^2 from 0.214 in the present case to 0.50 and that the typical standard error for a sample of 9,125 is 0.015781. An R^2 of 0.50 would probably be a conservative estimate for some longitudinal analyses where changes in, say, retention intentions are being measured at two points in time. In modeling change, the first measurement serving as a covariate would be expected to be highly correlated with the second measurement, and, hence, would by itself, be a strong contributor to the R^2 . Using these assumptions the standard error of a regression coefficient will increase by a factor of $\sqrt{\frac{9125}{N}}$ (a factor representing a decrease in the sample size) and decrease by a factor of $\sqrt{\frac{1-0.214}{1-0.5}}$ (a factor representing an increase in the R^2 from 0.214 to 0.5). Thus, the total multiplicative correction factor would be $\sqrt{\frac{9125}{N}} \cdot \sqrt{\frac{1-0.214}{1-0.5}}$ or $0.7975 \sqrt{\frac{9125}{N}}$ where for our purposes N takes the values of 500, 750, and 1,000 respectively. Using this correction factor the average standard errors for N s of 500, 750, and 1,000, are 0.0538, 0.0440, and 0.0380 respectively. These are the estimated standard errors used to

construct the power table presented below. The power table assumes a one-tailed test with $\alpha = .05$.

Power Table

<u>Effective Sample Size*</u>	<u>Expected Number of Respondents**</u>	<u>Initial Sample Size</u>	<u>Population Regression Parameter</u>		
			<u>.05</u>	<u>.10</u>	<u>.15</u>
500	1,000	1,250	.24	.58	.87
750	1,500	1,875	.30	.73	.96
1,000	2,000	2,500	.37	.84	.99

*Assumes a design effect of 2.

**Assumes an 80% response rate.

The power table indicates that our "rule of thumb" of an effective sample size of 500 observations seems to be adequate for the types of regression models we will be estimating. Moderate size effects are detected 58% of the time and large size effects 87% of the time. The first column adjusts for the loss of information due to the clustering effect from the sample design. The second column adjusts for nonresponse to the survey. The initial sample sizes are obtained by multiplying the effective sample sizes by the design effect, and then dividing by the response rate.